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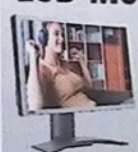

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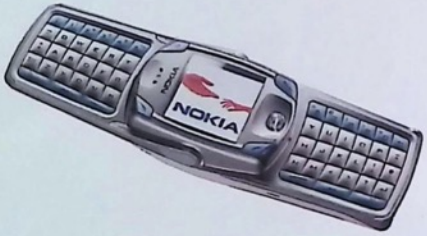

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Editorial

The move to digital has changed the way we view pictures.

Literally speaking, we tend to view them more on-screen than as prints now, whether at home on the PC or out with an impromptu PDA, laptop or camera slide show for anyone polite enough to feign interest in our family or vacation snaps.

Figuratively, we seem to view captured frames as having less intrinsic value; it doesn't matter if you shoot a dozen pictures of the same landscape or if you burn off six frames capturing what may turn out later to be a failed panoramic photo. Digital allows us to experiment without thought for the cost associated with each click of the shutter.

Ironic then, if you agree thus far, that digital has also added value to photographs. With numerous online photo sharing sites, pictures sent back and forth via email and with a series of user-driven fine art and stock photography sites online, we're able to see pictures that we might not otherwise have been exposed to. Gallery style photos are available online and on many sites, a strong and dedicated community of amateur photographers solicit and receive comments and criticism of their work.

Diehard amateur photographers would have had to perhaps take a second job to afford the consumables required for film photography or learn to roll and develop their own. Now, with digital single lens reflex (SLR) cameras coming in at just under the $1,000 mark and with the price of in-camera storage dropping into a more affordable range, more people than ever can perhaps scratch the photography itch.

There are those who get caught up in the gadget lust part of digital photography, endlessly debating the ins and outs of cameras, storage media, printers and so on while flaming anyone that dares to disagree.

While pre-purchase research is always important, whether you use a low-end digital point and shoot, professional level digital SLR or any variation in between, the important thing is just to take pictures.

Enjoy the issue,
Andrew Moore-Crispin
Editor-in-Chief

Last month we asked: What digital camera features are most important to you?

Jim Gunnell writes: Over the years, I've built up a rather solid investment in 35mm and digital cameras. Both have their own unique advantages and disadvantages. The one thing that I would really like to see is the ability to swap my lenses between the cameras. I like my cameras, but I really like my lenses.

Mr. Razavi writes: What will sway me is a camera offering short shutter lag and quick image processing, 2X or 3X zoom, support for inexpensive CF memory cards, 4 to 6 megapixel sensor, and great firmware. Finally, I think hard about the form factor suiting my needs. Bottom line: don't fall for a single impressive feature without knowing the rest of the story!

Letter of the Month

Our Letter of the Month comes from Jonathan Chang who writes:

I think that one of the biggest factors that camera manufacturers are missing out on is the fact that a lot of people will simply never print their pictures out. It is reasonable to say that most people have one portable gadget capable of displaying photos, and at home they have a computer.

The implication of this is that megapixels are not nearly as important as people seem to think. On a typical PC, displaying a 1600x1200 JPEG is slow and unnecessary. What would be appreciated are cameras that are extremely portable, have fast shot-to-shot times and warm-up times, good flash, and well thought-out preset modes that make taking good pictures easy and quick.

For his letter, Jonathan wins a Jolt messenger style laptop carrying bag from Samsonite.
Congratulations Jonathan.

This month, in addition to general feedback on the issue, we're asking for your thoughts on our question of the month: **What gadget or technology should every student have?** Whatever your opinion, we want to hear from you. Send your thoughts to: **letters@ppublishing.ca.**

The letter chosen as Letter of the Month will win a copy of McAfee's Internet Security Suite 2005 (ver. 7.0) for protection from malicious sites and email, viruses, pop-up ads, auto-install programs, identity theft, hacking attempts and viruses. With a full suite of online security software and 24-7 live tech support, Internet Security Suite 2005 is a comprehensive package for protecting your PC online.

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Single lens reflex = multiple shot options

Digital SLRs break further into the consumer market

Nikon D70s

www.nikon.ca

The Nikon D70s is a sparkling performer that impresses on a number of fronts. Nikon describes the D70s' autofocus system as having "predictive focus tracking and Lock-on." It sounds like typical marketing hype, but it seems to work. In May, a pair of robins was fighting in my back yard and the D70s gave me my shot of the month, freezing them in mid air, just a split second before they clashed.

The camera's continuous shooting performance is another noteworthy feature. Setting the camera's shutter speed to 1/125 sec, I timed how long it would take the camera to fire off 50 shots. The results: 16 sec at JPEG normal, 26 sec at JPEG fine, and just under a minute in RAW mode. This means Nikon's stated firing rate of three frames per second can be achieved. The camera seems able to sustain continuous shooting over a long period – I held the shutter button down for one minute (normal JPEG mode) and the camera took 155 consecutive shots (it took another two minutes for the write operations to finish). Is there an ultimate limit? There may be, but I figure that if you want to capture more than a minute of continuous action, you should be looking at a video camcorder, not a dSLR.

When you buy the D70s as a "with lens" package, you get a very good 18-70 mm zoom that incorporates Nikon's special low-dispersion ED glass elements. Because of the 1.5x field of view adjustment factor, the 18-70 zoom range is equivalent to approximately 27-105 mm on a 35mm film camera.

The best specs in the world would be simply a technical exercise if the camera didn't do what it was designed to do, which is to take photos. Here, the D70s once again performs well. Even on the medium quality setting of standard JPEG, the colours are bright and saturated and there's nary a hint of compression artifacts.

Olympus EVolt E-300

www.olympus.com

Not having the tell-tale pentaprism housing that identifies most single-lens reflex cameras, the EVolt E-300 could be mistaken for a somewhat oversized point n' shooter. An SLR it definitely is, however; the flattop profile is achieved by using a side-swinging mirror rather than a prism. That's not the only unusual aspect of the EVolt. Olympus has charted its own dSLR course, starting with a clean sheet design spec called Four-Thirds for its pro-level E-1 and entry-level E-300 lines. Olympus states it chose this architecture because it provided "the best size-to-performance benefits." And small it is, although the Pentax *istDS is lighter and narrower, though slightly taller and thicker.

Most entry-level dSLRs have a six megapixel sensor, but the E-300 betters that by using an eight megapixel sensor that captures 3264x2448 pixel images at its highest resolution. The body construction is also unusual. It has an aluminum chassis under that plastic skin, and feels

D70s by the numbers

Resolution: 6.1 million pixels

Weight: 600 g body only (add for lens or other attachments)

Dimensions (WxHxD): 140x113x78mm

Price: Body only, $1,100; with Nikkor lens, $1,600

Field of view adjustment factor: 1.5x

Exposure modes: Six scene modes plus auto, multi-programmed, aperture priority, shutter priority and manual

Shooting modes: Single frame, continuous up to 3 frames/sec, self-timer (2/10 sec delay), remote delay

Flash / sensitivity: Built-in pop-up flash with guide No. of 13 meters at ISO 100; shoe mount for speedlight and sync

Battery type: Rechargeable lithium-ion (Li-ion) pack; can be used with optional holder

Battery life: Approximately 2700+ shots per charge

Available lenses: Nikkor lenses (most AF-S and AF-I lenses can be used in manual focus only)

E-300 by the numbers

Resolution: 8.0 million pixels
Weight: 580 g (body only with no lens or other attachments)
Dimensions: (WxHxD) 147x85x64mm
Price: Body only, $1,000; with Zuiko lens, $1,200
Field of view adjustment factor: 2x
Exposure modes: 14 scene modes plus programmed, aperture priority, shutter priority and manual
Shooting modes: Single frame, continuous up to 2.5 frames/sec, self timer (2 or 12 sec delay), optical remote with delay
Flash / hotshoe: Built-in pop-up flash, plus built-in standard hot shoe
Battery type: Rechargeable lithium ion
Battery life: Very good (500+ shots per charge)
Available lenses: Uses a new digital-only Four-Thirds system, available mainly from Olympus. Though lens variety has been an issue, third-party makers, notably Sigma are now offering them

very solid. Dust accumulation on sensors is a common problem with digital SLRs, since the inner workings are exposed each time an interchangeable lens is removed. To combat this, the E-300 incorporates Olympus' Supersonic Wave Filter designed to keep the sensor free of such debris. In short, the E-300 is loaded with technical innovation.

It's also a capable shooter, performing very well in a variety of indoor and outdoor situations. The 14-45 mm zoom has a good balance of wide angle and telephoto performance, and the focusing proved to be very responsive. The camera's field of view adjustment factor of 2x means the zoom range would be comparable to a 28-90 mm zoom on a 35 mm film camera.

In standard-quality JPEG mode, the E-300 has impressive continuous shooting performance – firing off 154 frames in a minute – but at higher-quality JPEG settings the buffer/processor limits the number of frames. In high quality JPEG mode, the camera stopped firing after 15 frames, and in raw image mode, after just four frames. For more leisurely shooting, however, the camera was always ready and a pleasure to use.

The image quality is very pleasing, with rich colours and good detail. Overall, this camera would make a very good entry into the world of digital SLRs.

By David Tanaka

Canon Digital Rebel XT

The Digital Rebel XT continues the Rebel tradition with an accessible, lightweight and easy to operate dSLR camera.

An automatic setting makes the camera easy to use for the point-and-shoot crowd, and scene modes help for fine-tuning the way an image is captured. For the more ambitious among us, users can also set the camera in aperture or shutter priority and let the camera do the rest. A full manual option allows users a still greater degree of control.

The same jog wheel is used to adjust both shutter and aperture settings with somewhat awkward button presses in between to switch between them. This is not unique to the Rebel XT however and with the ability to easily adjust the exposure value, bracketing doesn't need to be

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a function of a user-adjusted aperture or shutter speed.

Canon's own image processing technology called DIGIC II allows the camera to capture sharp, bright images that are free of noticeable artifacts and "jaggies" below 800 or, preferably, 400 ISO. As a result of an improved buffer and DIGIC II, the Rebel XT can capture 14 successive images at three frames per second in Large mode before slowing down to a still respectable about one second per shot.

The Rebel XT also offers a mirror lock function for cleaning the capture plane ... very carefully.

Pentax *ist DS

The Pentax *ist DS does things a little differently. While other dSLRs we've seen have rechargeable battery packs, Pentax ships with two disposable 3V lithium cells, and where other companies stick with CompactFlash II storage media, the DS uses physically smaller SecureDigital cards.

Users can substitute the two 3V cells for four rechargeable AA batteries, and since the 3V cells are lithium, they won't lose their charge and can be kept on hand as a spare.

Pentax is trying to fill in the small and light space for dSLR cameras and succeeds. The *ist DS clocks in at a mere 605 g with batteries and memory card installed and is physically the smallest of the four cameras HUB looked at.

Rebel XT by the numbers

Resolution: 8 million pixels
Weight: 540 g (body with battery) + approx. 200 g (kit lens)
Dimensions (WxHxD): 126.5x94x64mm
Price: body $1,150; with lens $1,300
Field of view adjustment factor: 1.6x
Exposure modes: Five scene modes plus auto, aperture priority, shutter priority, auto depth-of-field, manual
Shooting modes: Single frame, continuous 3 frames/sec up to 14 frames; self timer (2 or 12 sec delay), optional remote release with delay
Flash / hot shoe: Built-in pop-up flash and standard hot shoe
Battery type: Very good: 400 – 600 shots per charge of the proprietary lithium ion battery pack. Can also function on six AA format batteries.
Available lenses: Sensor matched to EF-S lenses. Compatible with EF lenses and several prosumer digital lenses.

*ist DS by the numbers

Resolution: 6.1 million pixels
Weight: 605g (body only with no lens)
Dimensions (WxHxD): 125 x 93 x 66mm
Price: body: $1000; with DA 18-55mm f3.5-5.6, $1100
Field of view adjustment factor: 1.5x
Exposure modes: Six scene modes plus "auto," program, aperture priority, shutter priority, manual and bulb
Shooting modes: Single frame, continuous up to 2.8 frames/sec (varies), self-timer (2 or 12 sec delay), optional remote release with delay
Flash / hot shoe: Built-in pop-up flash and standard hot shoe
Battery type: 2x disposable 3V lithium ion cells included, life very good. Variable / unknown using rechargeable or other AAs
Available lenses: Sensor matched to Pentax DA lenses, backwards compatible with large back catalogue of Pentax lenses, adaptor required for screw-mount lenses / Certain features on older lenses may not work

With its film legacy comes a large number of compatible lenses, including optics from Pentax's K through KAF2 to screw mount and others. Some may require an adapter to mount to the *ist DS and not all lens or camera functions will necessarily be available on the lens selected.

A relatively large two-inch LCD and an uncluttered and logically laid out button and dial configuration make the camera a good choice for general family use too; an automatic setting does a good job and helps in a shared camera situation.

Image processing is slower than the other dSLRs tested and users can only realistically shoot off five frames in RAW before the camera needs to take an estimated 3.5 second break between shots.

The actual camera start up time seems unaffected by the sluggishness however, and it's ready to shoot within a fraction of a second (Pentax suggests .2 seconds) of turning it on.

The auto focus seems confused at times relative to the other cameras tested, tending to second-guess itself.

That said, the pictures the camera takes are of excellent quality with bright and distinct colours and a nice overall tone.

By Andrew Moore-Crispin

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zCover cases

Richmond, BC-based zCover (www.zcover.com) offers solutions for keeping portable devices free of dust and protected against scratching. The cases are crafted from non-toxic silicone rubber – making them flexible but durable – and come in a variety of styles including funky solid colours, swirly camouflage, and glow-in-the-dark "candy." The cases are also washable and have an anti-static finish to reduce the chances of dust clinging to the outside surface. The company's Web site currently advertises cases for the iPod (including Shuffle and Mini), Creative Zen Micro and PMC, Treo 600 and 650, Sony PSP, and iRiver H10. Where applicable, and depending on the product, the cases come with belt clips, plastic screen protectors, lanyards and other accessories.

Prices range from US$19.95 (about $25) for the Creative Zen Micro "Cassock" case to US$34.95 (about $43) for the Treo-compatible "gloveOne."

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Lexmark P4350

According to Lexmark, its P4350 all-in-one inkjet printer is the industry's first colour LCD screen-equipped all-in-one with a price point of less than $150.

With an estimated retail price of $149.99, the P4350 prints 4x6 colour photos directly from memory cards or from digital cameras via PictBridge. The 1.7-inch colour LCD screen allows users to preview, crop or resize images before printing, and to print without using a computer. The P4350 also includes a flatbed scanner.

Lexmark has also launched a line of photo papers optimized to work with Lexmark printers including the P4350. The cost of the paper will range in price from $13.99 for a 20 count 4x6 Premium pack, to $39.99 for a 50 count 8.5x11 Premium pack. Using Lexmark's Evercolor inks and photo paper, pictures can last more than 200 years in a stored photo album, according to Maurice Benatar, marketing programs manager of Lexmark's Consumer Printer Division. For more details, visit www.lexmark.ca.

Sharing your digital pictures online

I remember my folks poring over our family albums with the relatives. "Look, here's Chad in his Speedos with a black eye and a missing tooth. And this was him when he had his little paunch. Now where's that one where he's wearing his cute little lederhosen outfit?"

Little did they know that I burned that traumatic photograph when I was 10. But had I been born and raised in more recent times, I probably wouldn't have had such an easy time removing that wretched image from existence.

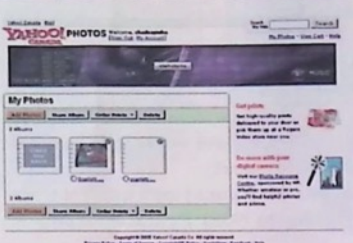
The act of sharing pictures with friends and family now requires just a few mouse clicks. The Internet is crammed full of photo sharing Web sites that allow people to store vast albums of photos and make them accessible to as many — or as few — people as they like.

As I start a family of my own and begin to amass a nice collection of photos that will one day mortify my daughter, I'm going to make sure it won't be as easy for her to destroy evidence of her more embarrassing childhood moments as it was for me. I wan my friends and family to have their very own picture of her crying her eyes out in a bunny suit.

To that end, I recently tested four digital photo sharing services.

Yahoo! Canada Photos (www.ca.yahoo.com)

One of the most popular and accessible photo sharing services on the Internet, Yahoo! Canada Photos is free, provides unlimited storage, and is easy to sign up for. In fact, if you have a Yahoo! email account, you already have Yahoo! Canada Photos.



Creating a digital album of photos is simply a matter of typing in a gallery name and clicking "Add Photos" to search your PC for images to upload.

Yahoo! Canada Photos provides three ways to share images: sending an invitation by email to visit your galleries, viewing your galleries with contacts in a Yahoo! Messenger conversation, and ordering prints (ranging from wallet size to 8x12). The print ordering feature is handy, allowing Canadians to either pick up their images at a neighbourhood Rogers Video store or have them delivered directly to their door for a small shipping fee.

While accessible and cheap (you can't beat free, unlimited storage), Yahoo! Canada Photos is pretty barebones. It provides minimal gallery options outside of assigning viewing privileges and creating simple slide shows, and the overall look and feel is decidedly unexciting — functional, but probably not groovy enough to make anyone under 50 feel as though they're engaging in something cool.

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Flickr (www.flickr.com)

Flickr is the polar opposite of Yahoo! Photo; it's a hip, independent photo sharing community with heaps of features.

The Flickr experience is not only about sharing pictures, but also about becoming part of a blog-like population where you get to know other users, join groups of people with similar interests and tastes, and create photo pools to share with your contacts.

Users have plenty of image organization options, ranging from creating galleries within galleries to assigning individual pictures tags that allow users to efficiently search your public photos.

Flickr allows users to post photos to several popular blog sites, and provides the ability to blog images from a camera phone.

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4 x SATA/150, 7.1CH Audio, LAN, 8 x USB 2.0, ATX (24PIN)

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Intel P4 Socket 775, Intel® 915G Express + ICH6,
Dual channel DDR266/333/400, Graphic Card integrated
1 x PCI Ex16, 3 x PCI, 1 x ATA/100 + 4 x SATA/150, 5.1CH Audio, LAN,
8 x USB 2.0, m-ATX, (24PIN)

865PE7MC-ES
Intel P4, Socket 775
Intel® 865PE + ICH5, Dual channel DDR266/333/400
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With 20PIN 300W ATX Power Supply

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90mm Fan
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Internal: 1 x 3.5"
Tool Less Design
3GHz+ Air Duct
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With 20PIN 300W ATX Power Supply

TS-01 ATX
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90mm Fan
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Internal: 2 x 3.5"
Tool Less Design
3GHz+ Air Duct
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With 20PIN or 24PIN 300W ATX Power Supply

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display camera information. You can monitor traffic to track your most popular images, and request to be notified by email whenever someone comments on a picture or gallery.

Serious photographers can join usergroups and participate in community forums, and professional users can even sell images from their galleries, posting their own prices with SmugMug facilitating transactions for a small commission.

SmugMug provides an affordable and multifaceted print ordering service through a professional printmaker chosen by the service's discerning membership. It's also one of the few photo sharing sites to allow its members to store and share video files, though limited to 8MB.

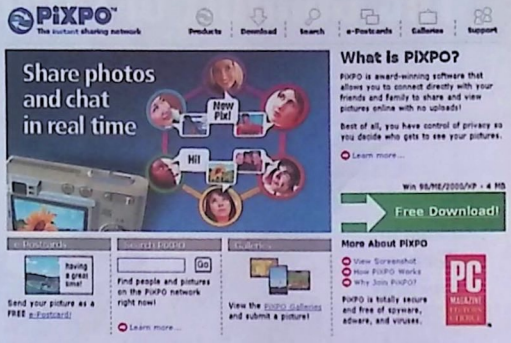
PiXPO (www.pixpo.com)

PiXPO is a peer-to-peer file sharing system more akin to applications like Kazaa and LimeWire than a traditional photo sharing Web site.

PiXPO users don't have to waste time uploading images. Rather, their PCs become file sharing servers that allow other PiXPO members to access photo and video files directly. With no need to upload files, users can quickly and efficiently create galleries of thousands of images that are searchable by other users in a matter of minutes.

Peer-to-peer perks aside, PiXPO also provides many of the same features offered by other photo sharing services.

Like Flickr, PiXPO has a very community-centric atmosphere, encouraging users to seek out one another and create groups to share pictures and information. Like SmugMug, PiXPO provides extensive gallery



options and functionality, including file sharing monitoring, editing and searching features, and even the ability to create simple e-postcards using your own images.

A new version of PiXPO with enhanced features is slated to be released to the public in July, and additional features including printing services and the ability to stream video from another user's DVD drive are slated to be added before the end of the year.

A PiXPO membership fee will run you US$29.95 (about $37) per year. A free version exists, but it places a limitation on hosting ability, the kind of invitations you can send, and number of pictures that can be shared.

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- Video: Giga Byte Radeon x300SE 128M DVI/TV out
- Monitor: Sony S93 19" LCD .26mm 600:1 25ms
- Optical Drive: Memorex 16x DVD+/-R/RW
- Audio: Onboard C-Media High Def 8 Channel Audio
- Lan: Marvel 8001 GBLan
- Case: Antec SLK3700AMB Tower & 350W PS
- KB: Logitech Internet Pro Desktop
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Intel inside Pentium 4

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- Audio: Onboard 6 Channel Audio
- Case: Mid-Tower (B319) 400W P/S
- KB: A4 Tech KBS-720 Keyboard
- Mouse: Logitech BJ69 Wheel/Mouse Optical
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- Audio: Onboard 8 Channel Audio
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- Video: Giga Byte Radeon 9250 128M 8xAGP TV Out
- Monitor: LG 1750sn 17" 1280x1024 .26 550:1 12ms
- Optical Drive: LG 4082B 8x DVD+/-RW
- Audio: Onboard 6 Channel Audio
- LAN: Onboard 8801 GbLAN
- Case: Mid-Tower (B319) with 400W P/S
- KB: A4 Tech KBS-720 PS/2
- Mouse: Logitech BJ69 Wheel/Mouse Optical
- Speakers: JBL Platinium Series 2.0 system

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AMD 64 Athlon

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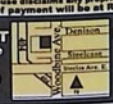

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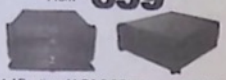

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Digital Photography Tutorial 17

Restoring Photos
Part 2: Basic tone and colour corrections

Last month we opened this series on restoring photos with some scanning basics. Let's now turn to tone and colour correction basics. Most image editors have several tools that you can use to make these changes and often there is more than one way to perform a correction, so feel free to experiment. Before you start, you should make a copy of your original file, so that you can always go back to it if necessary. As an overall strategy, work with adjustment layers where possible, as they have a few advantages.

A good tool to start with is levels or a levels adjustment layer. The levels panel shows a distribution of values from 0 (no value, black) to 255 (maximum value, white). Below the histogram is a thin bar that goes from black to white, and below the bar are three triangular markers, which are actually sliders that can be moved to the left or right.

A common problem with old photos is a limited range of tones. You can see this graphically – the histogram will span a narrower range so there won't be values all the way to 0 on the dark side, or to 255 on the light side. When you take the black slider and move it toward the centre, you can see the image get darker; likewise, move the white slider toward the middle and the image becomes lighter. By moving these sliders, you are re-establishing the white and black points of your photo. You can use thresholds to find the darkest and lightest areas of the photo, or you can use your own sense of aesthetics.

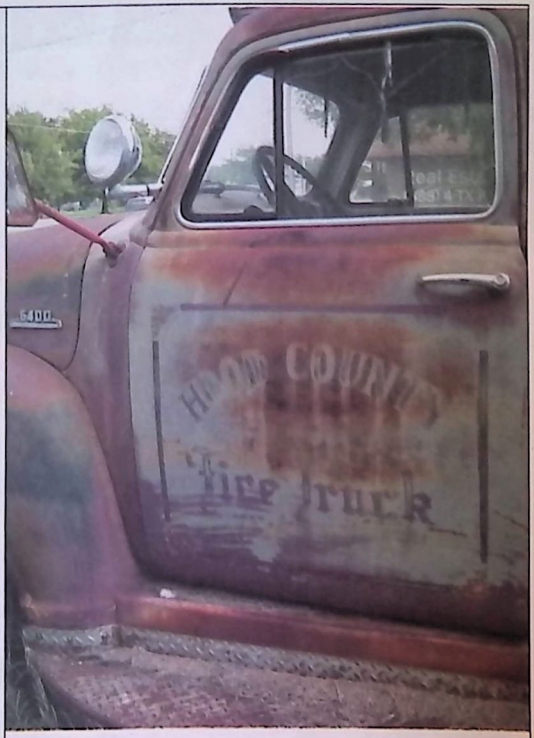
For example, the wheel well of an automobile would be a natural spot to pick for the blackest black, since there would be no detail you'd want to expose there. Likewise for a white point, the reflection off a chrome bumper would work, since it would be pure white with no detail. The grey slider represents the middle value of 128. Moving this slider to the left or right affects the mid-tones, and makes the overall image look darker or lighter. Adjusting the white, black and middle grey points using levels is often all that's needed to fix a faded photo.

Another useful tool, especially for colour prints, is the colour balance tool or adjustment layer. The colour balance tool has three sliders marked cyan-red, magenta-green and yellow-blue. Red dyes tend to be most susceptible to fading, so a good place to start when correcting a faded colour print is to boost the red. Do this by moving the cyan-red slider towards red. You may also find that moving the magenta-green slider toward magenta will also help. If the paper has taken on a yellowed appearance, try moving the yellow-blue slider towards the blue. If the photo has faded to the point where there isn't much colour left to correct, you can boost the saturation using the saturation tool/adjustment layer.

By using adjustment layers, you can make tentative and interactive judgements during your correction because you can access each layer over and over to modify your previous settings. This allows you to fine-tune your corrections.

By David Tanaka

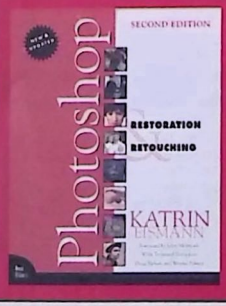
Questions and comments about David Tanaka's monthly column can be sent to digitalimaging@ppublishing.ca.



Photoshop Restoration and Retouching, 2nd Edition

By Katrin Eismann
Published by New Riders ISBN 0-7357-1358-2
Paperback, 368 pages Price: $75.99

Armed with the information in this book, you'll have the confidence to tackle the restoration of that cherished but crumbling family photo, or make a contemporary photo better. As the title suggests, the book delivers Photoshop tools and techniques dealing with two related tasks: photo retouching and photo restoration. There is a wealth of useful information in it, so even if you are not a Photoshop user, you will learn more than a thing or two about these subjects. The tutorials are well presented, but require a decent understanding of Photoshop. Thus novices may initially be in over their heads, although the presentation is very clear and with many good photos to illustrate the techniques to help inexperienced users grow. A worthy addition to the libraries of serious digital darkroom workers.



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DV, or Not DV

Video in the Raw – No Sex, No Lies!

Following your many interesting comments and questions, generated by previous DV columns on the value and preservation of analog and digital media, I'd like to ask you a question:

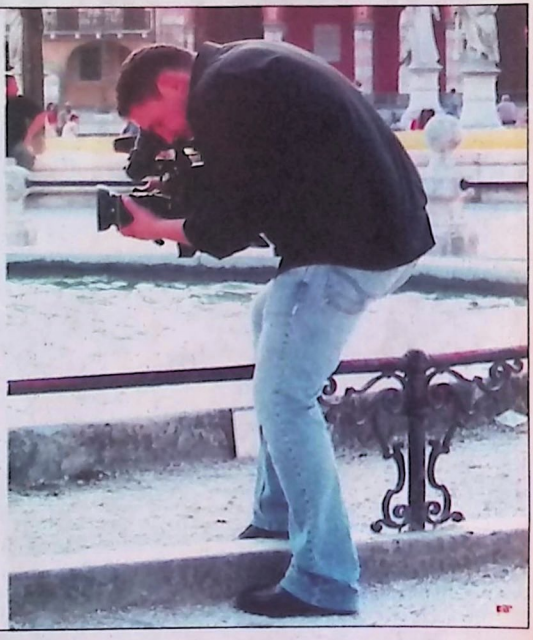
How many of you go raw?

That is, how many videographers out there willingly show, share or sell raw, unedited video footage? Whether it's home movies from a recent vacation, the camera tape from a wedding, or even unedited footage from a paid video assignment, the practice of showing unedited video footage raises interesting aesthetic, technical and production issues.

Aesthetically, do we "understand" unedited footage? Can the average TV viewer sort out in their mind's eye what is good, bad or indifferent about raw footage? Does including otherwise shaky or normally unusable video become justified because of the content itself? Does editing video change the impression we get of what happened?

Technically, editing analog used to mean losing video quality through generation loss. Today, digital video eliminates most worries about such degradation – but concatenation is another matter. That's digital processing using several different codecs, or video compression/decompression devices. It can cause digital artifacting, which can be compounded when converting between different formats.

From the production point of view – pun intended – should we shoot like a camera operator, or like a video editor? Capturing on video what



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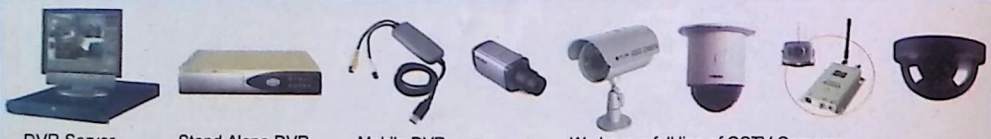

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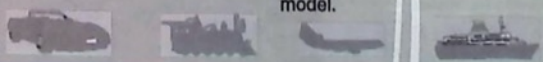

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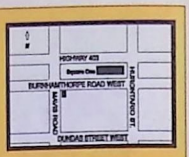

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happens right in front of our eyes is one skill, but some video storytellers prefer to rearrange and re-emphasize the scenes they capture.

I bring all this up because it happened to me recently. I was commissioned to provide video coverage of commemorative ceremonies marking the end of WWII, and to document the activities of those gathered to mark the successful conclusion of The Battle of the Atlantic.

Two DV cameras were used, and about four hours of footage was shot. We covered wreath-laying ceremonies, marches and parades, a special flag-raising, and a social and ceremonial cruise on Lake Ontario.

One camera was on a tripod, and as a result it was mostly fixed in position, with little or no relocating. It was supposed to get the bird's eye view, the big wide establishing shots, giving viewers a general sense of what was going on, where and when. The other, smaller camera was used on a monopod, to be more mobile and flexible. It got close-up shots, the faces and the medals, the extra detail that adds depth to a video production.

On this shoot, the camera operators could not communicate with each other, other than the occasional eye contact or hand gesture.

I think we did a good job with the coverage, but as with almost any live event video, things happen that are not expected. Sometimes, you have to "swish-pan" the camera (a very fast and rather jarring camera move from side to side) to capture a certain scene or action, but you daren't stop the camera lest some invaluable audio be missed. Sometimes, in order to record someone's entire speech, you have to let otherwise long and – in all honesty – uninteresting footage go by without

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changes of any sort.

And yes, sometimes in the rush to get from one location to another, you leave the camera rolling, ending up with several minutes of someone's shoes, running along a sidewalk!

Shooting on Mini DV means the footage has to be transferred (not many people have DV tape machines at home) so the opportunity to manipulate the video while getting it to DVD or VHS usually presents itself no matter what.

Sure, it's easy to edit digital video today (and we will explore several ways to do so in upcoming columns), but when neither time nor budget is available to clean up the footage or edit it down a bit, what do you do? Show the raw, unedited footage, warts and all? Try and explain why all the extraneous imagery is included? Pull an all-nighter and edit the darn thing anyway?

From the rather basic, often built-in video editing tools that come with the major operating systems (like Windows Movie Maker or Apple's iMovie) to more sophisticated high end video finishing packages like Sony Vegas or Avid's Express Pro, there are a wealth of digital video editing tools, techniques and technologies out there.

We'll talk about some of those choices in future columns; in the meantime, we're happy to keep receiving your comments and questions - whether raw or edited.

By Lee Rickwood

Lee Rickwood is a freelance writer and independent video producer. He can be reached at videodaze@goodmedia.com.

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Portable photo printers

The cost of printing photos from a photo printer still averages out to be significantly higher (around 70 cents per photo according to our calculations) than having them processed at a photo lab (49 cents per digital print as advertised at Blacks Photography). However, portable photo printers offer the significant advantage of immediacy – minutes after the photograph is taken, you can be holding the fresh, glossy 4x6 in your hands.

HUB took a closer look at five of these portable photo printers.

Epson PictureMate Deluxe Viewer Edition

Price: $319.99 **Type:** Inkjet **Weight:** 2.5 kg
Dimensions (cm, HxWxD): 16.3x25.7x15.5
Max resolution: 5760x1440 optimized dpi
Cards supported: CompactFlash Type I and II, MagicGate Memory Stick, Memory Stick, Memory Stick PRO, Microdrive, MultiMedia Card, Secure Digital, SmartMedia, xD Picture Card, xD Picture Card Type M
Approx. cost per print: 40¢ **Average time per print as tested:** 1:31

The PictureMate is one of the most truly "portable" photo printers on the market, given that its built-in colour LCD screen and extensive onboard image manipulation features make it able to function handsomely independently of a TV or PC. A sturdy handle further enforces the "take anywhere" vibe (anywhere that happens to be in the vicinity of an AC plug, of course).

The printer auto-detects the number of photos on any card inserted into its front-mounted card reader and gives users the option to print all

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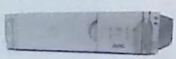

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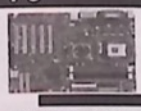

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or some. Using Print Some, the LCD displays colour thumbnails that can either be viewed as a slide show or displayed in groups of several per screen (useful for cycling through a large volume of pictures.)

The LCD-driven interface is very intuitive to navigate. Using the arrow keys and OK button while in thumbnail view, the user can easily toggle the number of copies to print and customize the layout by adding borders (including a selection of Disney "fun frames"), print sheets of wallet-sized photos, add a date or time stamp to the photo, and apply black and white or sepia color effects. (These steps can also be performed with the help of a Wizard.)

Users can also perform rudimentary photo editing functions straight from the printer, including adjusting the brightness, saturation and sharpness of a photo, rotating and cropping, and zooming in or out.

The CD-ROM included with the PictureMate contains Epson Software FilmFactory and Epson PhotoCenter. The latter installs a desktop link to Epson's free photo sharing Web site, where users can organize and store pics online, print from the Web, and create online postcards. Film Factory is a photo editor that also manages all photos stored on the PC for printing through the PictureMate when docked via an A – B USB cable (not included).

The pictures the PictureMate produced in our tests were punchy with good colour balance and strong hues. The combination of very good photo quality with medium-fast printing time and good useability make the PictureMate a great all-around choice. Although saddled with an expensive suggested retail price of $319.99 – at least $100 more than some of the other printers tested – the investment should pay off in the long run since the Epson was the least expensive printer to maintain by a wide margin at a mere 40 cents per sheet.

Sony DPP-FP50

Price: $249.99
Weight: 1.2 kg without tray
Dimensions (cm, HxWxD): 6.4x20.9x17.8
Max resolution: 300x300 dpi
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Approximate cost per print: 87¢
Average time to print as tested: 1:04

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As a dye-sublimation printer, the DPP-FP50 uses a special paper tray that must be inserted into the side of the machine (jutting out a good five or six inches), and when printing, the paper feeds through either end. The getup seems a bit fragile, and there needs to be ample space around both ends of the printer so that the paper doesn't get caught. An attachment built onto the paper tray conveniently acts as a receptacle for finished photos.

The DPP-FP50 has a non-colour LCD that is capable of displaying text but not pictures, so you can preview the file names of each photo, but not the thumbnail of the actual image. It's possible via the onboard menu to print an index card that can fit 48 thumbnails with file-names listed above each as a means of selecting which photos you want to print. However, given that a page costs around 87 cents to print on the DPP-FP50, you might want to consider simply renaming each photo's default alphanumeric file-name to something recognizable.

While the LCD ensures that the DPP-FP50 can function as a standalone if needed, the printer needs to be connected to a television or PC to unlock its most powerful features. The DPP-FP50 connects to a PC via an A – B USB cable, which strangely isn't included in the packaging although the noise-reducing clamp filter that the manual instructs the user to attach to the separately purchased cable is.

The printer comes with a CD-ROM that installs PictureGear Studio on a PC, a photo editing tool that contains such features as red eye reduction, colour-correction, zooming and cropping. There's also a prints studio with templates for creating things like calendars, postcards, and more.

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Max resolution: 300 ppi(pixels per inch)
Type: Continuous tone thermal-dye transfer
Cards supported: Secure Digital, MultiMedia Cards
Approximate cost per print: 82¢
Average time to print as tested: 0:58

Kodak's EasyShare printer dock is a bit of a maverick in our roundup given that it's designed to specifically accommodate digital cameras in Kodak's EasyShare line. The printer has no built-in LCD, but its top sports a docking station for EasyShare cameras to be mounted on, after which users can browse images on the camera using the camera's own LCD, or connect the printer to a TV screen via video cables to get a blown-up view.

The printer does feature support for SD and MMC cards, but there's no way of navigating the contents of the cards independently of the docked camera. When we tried to print photos from the card reader that had been dragged onto a card from a PC, the EasyShare detected the card, but not the photos (perhaps because they were in a separate subdirectory.) When the same card was inserted into a Kodak EasyShare camera and additional pictures were taken with said camera, the printer did recognize those pictures when the card was re-inserted.

The included CD-ROM installs EasyShare Software with a nice variety of editing options including crop, red-eye reduction, adjusting brightness/contrast, and some neat filters such as black and white, colouring book, cartoon, and fish-eye lense.

While the EasyShare printer dock's compact, lightweight size and fast printing time are advantages, its photo quality was one of the weakest in the roundup, being upstaged by the DPP-FP50, Lexmark and Epson. One of our test prints, a red and yellow flower against a blue backdrop, was rendered extremely washed out and flat by this printer, and the other test pic, though it fared a little better, was still washed out. (These test photos were printed on the included Kodak paper to boot.)

Canon SELPHY DS700

Price: $249.99
Weight: 1.8 kg
Dimensions (cm, HxWxD): 7.9x21.6x21.6
Max resolution: 4800x1200 dpi
Type: Inkjet
Cards supported: CompactFlash, MagicGate Memory Stick, Memory Stick, Memory Stick PRO, Microdrive, MultiMedia Card, Secure Digital, SmartMedia (3.3V only)
Approximate cost per print: 63¢
Average time to print as tested: 1:32

With no LCD or navigation buttons, pictures on the Canon SELPHY DS700 need to be viewed through the TV, PC, USB-connected camera, or mobile phone via its Infrared port.

However, the included CD-ROM does contain an extremely useful memory card utility that, when installed on a PC, autodetects any memory card inserted into the Canon's card slot while it is connected to the PC via a not-included A - B USB cable, then prompts the user to import photos from the card onto the PC for editing and printing.

The disc's editing software, Easy-PhotoPrint, on top of being a printing utility with rotate, trim, and date stamp functions, also offers several photo enhancement functions such as red eye reduction, a manual blemish remover, and digital face smoothing, brightening and sharpening. While interesting toys to play with, the applications admittedly weren't that effective. (If you're serious about image editing, stick with Photoshop.)

Next to the Epson, Canon is the cheapest printer to maintain at around 63 cents per photo. However, the photos it yielded in our test were of relatively poor quality – washed out and "dusty" looking.

By Erin Bell

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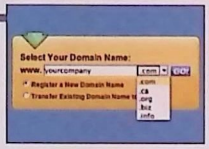

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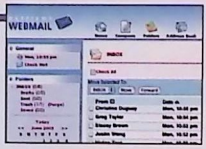

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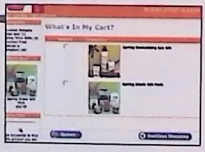

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Remote possibilities

Remove the clutter and take control

Look down at your coffee table and be honest – if you've got more TV remotes than you do family members, you've got a problem.

Why not join the "minimalist movement" and invest in just one remote to control everything from your television to your satellite dish to your stereo receiver to your DVD, VCR and PVR.

Unlike the primitive "universal remotes" of yesterday – with their confusing code books, limited features and ugly design – today's devices are smart, chic and a cinch to program.

And they can cost you a pretty penny, too – for example, the two-handed Magnolia MX-3000 Universal Remote Commander costs roughly $1400. We'll skip these high-end solutions for the time being, and take a look at three new and unique TV remotes that should appear to a different user.

Logitech Harmony 688 Advanced Universal Remote

($299; logitech.com)

This Canadian invention is billed by many critics as the "world's best universal remote" – and for good reason. For one, the Harmony Remote, now owned by Logitech, can be easily programmed by simply connecting it to a PC's USB port and going online to answer a few easy-to-follow "Web Wizard" questions.

It's also the first remote with buttons such as "Watch a Movie" – within seconds, this device will automatically set up all your applicable

audio/video components, such as turning on your TV, DVD player and receiver, then changing the channel to 03 and pressing play on your DVD player.

Its ergonomic design that molds to your left or right hand, and reinforced buttons that are cleverly placed on the face of the unit, makes the Harmony remote more comfortable than any other on the market. A small LCD screen provides extra information to the user, both the display and buttons feature a bright backlit glow when needed.

Pros:

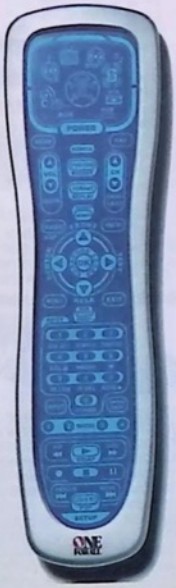
–Easy to setup and use
–Very comfortable
–Can control other devices such as lights or a computer
–Works with both Windows and Macs

Cons:

–Requires Internet connection to set up
–Pricey

One For All: Kameleon 8

($99.99; www.bestinelectronics.ca)



This slender remote controls up to eight devices, and has the ability to learn commands from your existing remotes by placing them head-to-head and pressing the "learn" button.

The device uses something called "Intelligent Illumination" to display only the keys that are necessary for the device you are controlling, eliminating key clutter and extending its battery life. Similarly, a built-in tilt switch means the buttons will begin to light up only once you pick up the remote. It then shuts itself off automatically when not in use. This remote is quite the conversation piece because of its futuristic, illuminated design.

A "Smart Macro" feature allows multiple commands to be executed with a single key press.

One thing we didn't like in our testing, however, was that the Channel and Volume up and down buttons (arguably

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the most-used ones on a universal remote) were too far up the neck, therefore users may have to change how they're holding the remote in order to access them. We found the most comfortable way to hold this device was farther down the neck, just below the centre mark, so the position of these key buttons is questionable.

Pros:

–Easy to program and use
–Works with most audio and video brands
–Relatively affordable

Cons:

–Layout of important buttons not in most ideal spot
–Not as customizable as other remotes

Weemote 3

($24.95; weemote.com)

If you've got young 'uns in the house and would like them to start channel surfing early, you might consider the Weemote 3, a colourful and easy-to-program oval-shaped universal remote designed for kids.

The small remote lets children access up to ten safe channels (chosen by mom and dad). Power, volume and channel changer buttons are also on the face of the unit. Each rubber button has its own unique shape, size and colour.

All programming is done in an area inside the unit, so parents will need a screwdriver to open the faceplate. A thin booklet provides program codes for popular TV, VCR and DVD brands, and explains how to block unwanted channels.

Heck, it's so small, inexpensive and simple-to-use, you may want this for yourself instead!

Pros:

–Good idea
–Simple-to-use
–Cute design
–Attractive price

Cons:

–Limited in functionality
–Not as easy to program as other "learning" remotes

By Marc Saltzman

Questions and comments relating to the Home Entertainment section, including Marc Saltzman's monthly column, can be sent to: homeentertainment@ppublishing.ca.

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Shedding Light on DLP

Each type of basic projection technology has its own characteristics and adds its own flavour to the images it creates. Just like you can always tell that a particular cheese is made by Kraft by its taste, a basic imaging technology determines how a particular brand of projector will look.

Projection imaging systems info on the Web:

Digital Light Processing (DLP)
www.dlp.com

Liquid Crystal Display (LCD)
www.3lcd.com

Liquid Crystal on Silicon (LCoS) or JVC variant (D-ILA)
www.hitachidigitalmedia.com/DMG/tech_projectors.jsp

One of those technologies is Digital Light Processing (DLP), where the actual imaging chip is called a Digital Micromirror Device (DMD).

The technology uses thousands of tiny mirrors to either deflect light through the projector lens, or not. If one of those tiny mirrors needs to show a half-strength green, it will move back and forth to deflect the full strength green light through the lens for half the time. This happens thousands of times a second so you won't notice it flickering; you just see a dimmer green. Again, all of the light shown for half the time equals half the brightness. It is an interesting technology that works extremely well.

According to Texas Instruments, the company who developed and owns the DLP technology, a three-chip "cinema" version is able to show 35 trillion colours. Single chip units are rated at 16.7 million colours, which is what most of us can afford. Personally, I can only see millions of colours, so a single chip works for me. Even high-end home theatre units come with this single chip and colour wheel design as opposed to the three chips and a prism you normally get with LCD- or LCoS-based systems. This puts DLP at a bit of a disadvantage when mixing colours in comparison, since it is done sequentially.

The colour wheel usually has a red, green and blue filter and sometimes a clear area to allow white light through. It quickly spins around letting each primary colour through to the imager in sequence, which the eye then puts together into one full colour image. The white segment, if present, bumps up the brightness of the image at the cost of contrast. This white segment is undesirable in a home theatre projector, so ideally look for three or six segment colour wheels.

The main image artifact with a colour wheel system is something called rainbow effect. If you dart your eyes across the image, you may notice a rainbow around high contrast edges within a picture. This is because the separate RGB parts of the picture update at different times, and when your eye is moving quickly across the screen, these different colour updates fall on different parts of the eye.

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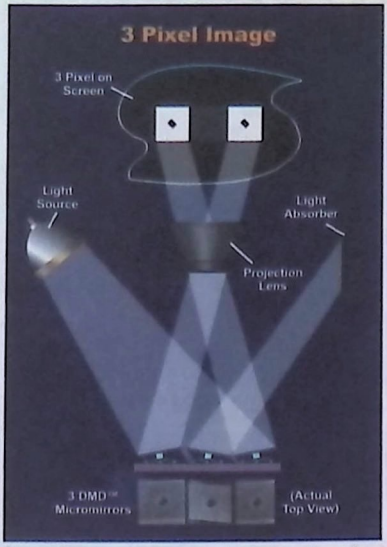


Although rare, some people have a real problem watching colour wheel-based systems, so make sure to see a demo before you buy DLP.

To combat rainbow effect, manufacturers have been increasing the rate at which the colour wheel turns as well as adding additional sets of RGB segments. Originally, the colour wheel cycled through all of its segments at 60HZ, which is called a one-times (1X) colour wheel. The standard for home theatre units is now 2X, and even higher numbers are common.

One advantage of DLP is that it's a purely "on" or "off" digital system. LCD and LCoS systems need to do a digital to analog conversion right before the signal makes it to the imager. These digital to analog conversions can add signal errors, and this means that DLP gets the most benefit from a DVI interface.

Another nice thing is that the tiny mirrors are tightly butted together, less than one micron apart. This makes for a smooth image compared to LCD, which can have noticeable blank areas in between pixels. This blank area creates a pattern that looks like a screen door. With DLP, you don't see this.

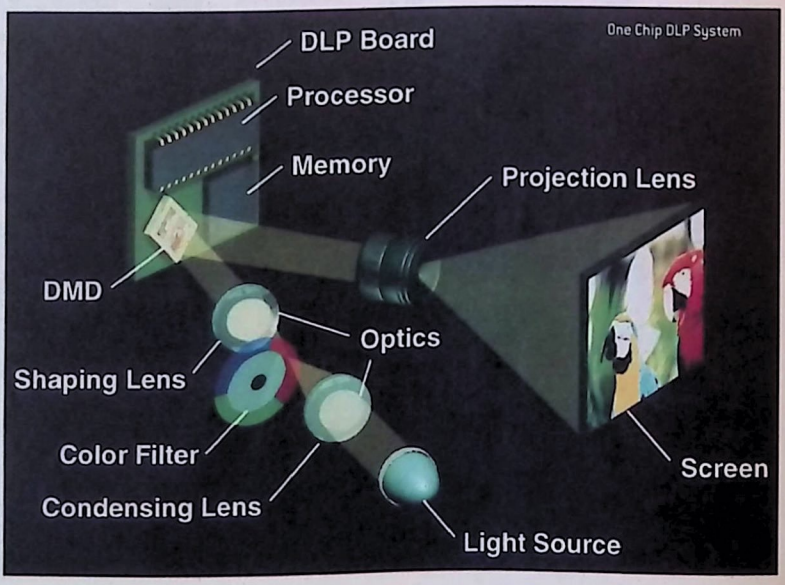
Also, DLP tends to have high contrast ratios of 2000:1 or even higher. Contrast ratios are important, although they only tell part of the story, so beware of relying too heavily on this specification when choosing a projector.

DLP projectors can be very small; in fact, InFocus makes one under two pounds. This can't be done with a three-chip system.

Finally, when you do get a stuck pixel on a DLP, chances are it's black, which is a lot better than the blaring orange that can occur on three-chip systems.

All in all, DLP imagers make great pictures in either front projectors or rear projection televisions.

By Andrew Carruthers



Unlock hidden "eggs" on DVDs

Movie buffs know DVDs offer high quality video, surround-sound audio and behind-the-scenes features such as director commentary and making-of documentaries. But only a handful of savvy film fans are aware of secrets planted on hundreds of today's DVDs.

Called "Easter eggs," these hidden treats serve as a reward for those determined enough to find them. An Easter egg might be a funny bloopers reel, musical score, cartoon clip, hidden interview or game. Consider them undocumented extras not listed on the back of the DVD box. Typically, viewers must play around with the DVD remote to unlock

these goodies. Eggs are usually passed on by word of mouth or via dedicated fans Web sites.

A few months ago we looked at the best ones for kids. The following are finest recent DVD eggs for adults, and how to access them:

A few months ago we looked at the best ones for kids. The following are finest recent DVD eggs for adults, and how to access them.

The Girl Next Door

Twentieth Century Fox Home Entertainment's steamy comedy has a

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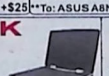

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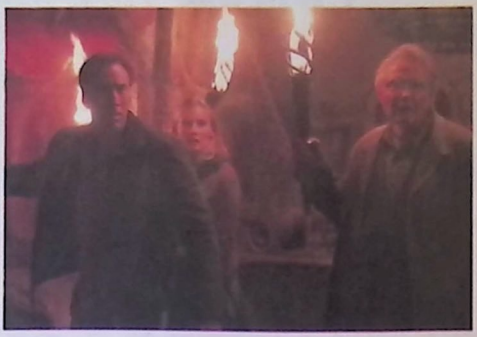

very clever Easter egg – if you know where to look for it. Pop in the B side of the disc (Supplemental) and from the main menu, scroll down to highlight the words "Gag Reel." Don't press Enter. Instead, tap the Right arrow button on the DVD remote and you'll see the letters "XXX" pop up on the screen. Now press Enter to be treated to an actual sex education film distributed to thousands of schools in the 1970s! Hilarious.

After the Sunset

Director Brett Ratner, who has hidden eggs on the Rush Hour DVD and its sequel, has planted a couple of good ones on New Line Home Entertainment's comedy After the Sunset. Here's how to unlock one of them: From the main menu, go to the second page of Special Features. Highlight the words Interview With A Jewel Thief, then press the Left arrow button on the DVD remote. A diamond will appear near the top of the screen. Press Enter to watch a practical joke played on actor Pierce Brosnan by Ratner. While the joke itself is G-rated, be forewarned about some adult language.

National Treasure

This one's a little tricky to find but is well worth the adventure. Pop in this Disney DVD and from the main menu, select Bonus Treasure Hunt. Follow the instructions to complete this game by solving the first jumble password (answer: Treasure). This unlocks a second page of extra features — but that's not the Easter egg. When you see the second page of features, press the Up arrow on the DVD remote, and a little black symbol will appear on the screen. Press Enter, and write down this master code (405). Now, head out to the

main menu and press the Up button on the DVD remote to highlight the chest and type in 405 before clicking Master Code. This egg unlocks a version of the film with pop-up trivia bubbles!

Sideways

You don't need to sip Pinot Noir to find a hidden egg on the DVD for Fox's Academy Award-winning comedy. Pop in the disc and select Scene Selection from the main menu. Then, select Chapters 13 to 16 and highlight Chapter 15, but don't press Enter just yet. Instead, tap the Left arrow button on the DVD remote, and a red bottle of wine will appear on the screen. Press Enter to watch an entertaining slide show featuring behind-the-scenes photographs during the making of the film as jazz music plays in the background.

The Ren & Stimpy Show: First and Second Seasons

Paramount Home Entertainment's collection of this bizarre animated TV show houses a little-known gem. Pop in the second DVD and select Bonus Features from the main menu. Highlight the words "The 'Banned' Episode: Man's Best Friend," and press the Left arrow button on the DVD remote. Stimpy will appear on the screen and say, "OK, kids, it's time for a secret cartoon." Now, when the Man's Best Friend episode begins, you can hear a hidden audio commentary track delivered by Spumco artist Eddie Fitzgerald.

Collateral

DreamWorks Home Entertainment's action drama features a few well-hidden Easter eggs. Pop in the second DVD and select Special Features. Once inside, the first option on this list should be highlighted (City at Night). Press the Left arrow button on the remote and a grey rectangle will appear. Press Enter to see a behind-the-scenes clip of Vincent (Tom Cruise) being a bad guy in a dance club. Repeat the same process on all of these Special Features (on both pages of extras) and you'll find most have hidden eggs!

By Marc Saltzman

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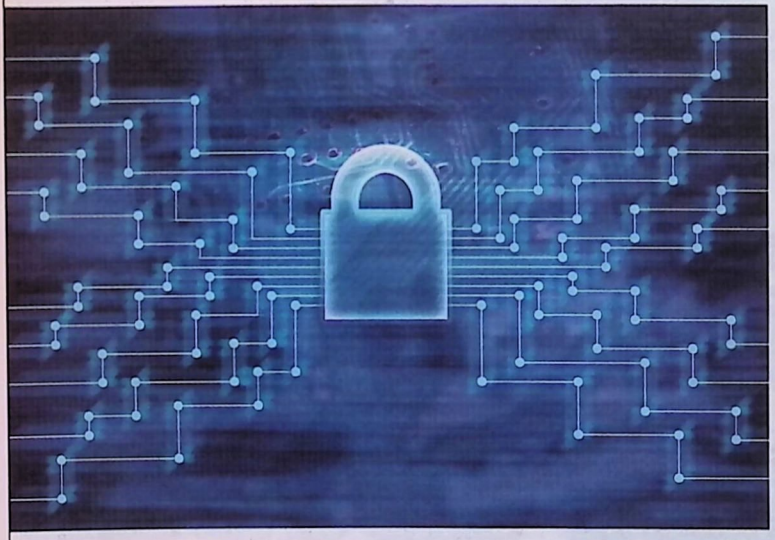
Connected: Digital Rights Management, Part 2

Last month we undertook a discussion on the Digital Millennium Copyright Act and its implications in the United States and the ensuing effect beyond that country's borders. In Canada, for example, our more measured response to copyright issues and our rejection of a Canadian DMCA resulted in our country being included in a special US 301 report that in essence wagged a seriously disapproving finger at our "lax" intellectual property laws, and stated that we would be monitored for signs of future improvement.

The fact is, the DMCA's raison d'etre seems to be to shelter big media corporations by enabling the criminalization of defeating by any means the copy protection or encryption technologies they may implement in either their distributed media (including CDs and DVDs) or the devices designed to play them. This technology is known as Digital Rights Management or "DRM."

I suppose the best way to illustrate how DRM affects the average technology user would be to draw a couple of examples from my own personal experience.



A few years ago, I was due to return home from a trip to Thailand and faced with the prospect of watching Air Canada-selected entertainment over the course of the 26 hour excursion, decided it would be a good idea to buy a DVD from a record store to watch on my notebook computer instead. Well it turned out that Air Canada surprised me on this trip and I never did crack open my computer. A few days after my arrival home, however, I remembered the DVD and decided to give it a spin. I fired up my (at that time) top of the line Sony DVD player and slid in the movie, expecting to be entertained. Instead I was annoyed. The machine wouldn't play my DVD at all as it was region coded 3 (Asia Pacific) instead of 1 (North America).

This struck me as completely ridiculous. Would it be acceptable for me to buy a standard set of PING golf clubs to play a round at the Bangkok Airport (you have to see it to believe it) and subsequently return home only to find they are disallowed at Pebble Beach?! I don't think so. But as mentioned last month, you aren't really buying anything save the plastic; you license the content.

My next encounter with warm and snuggly DRM came at the combined hands of PureTracks.com and Microsoft.

With over 400 CDs in my collection, I am not a casual consumer of music. There have however over the years been occasions where my desire to own a single track did not in my view warrant the purchase of an entire CD, as the rest of its content did not appeal. Until recently, I would simply forego that purchase, but with the advent of legal digital music downloads in Canada, I decided to give it a try.

Finding a song I was interested in on PureTracks.com was a relatively simple matter – downloading it and getting it to play was not. First off, the site would not allow me to download the tune until I had installed Microsoft Windows Media Player 9 ... of course they didn't tell me this until I had purchased. The reason? The track was encoded in such a manner as to preclude its playback on any software save Media Player 9, which has strong support for DRM. Of course, at the time, this software wasn't exactly stable and I soon discovered after downloading and installing it that my computer was now completely sound free – and not in a liberating way.

No amount of tweaking over the course of an entire week could get my sound back. So, having no way to play the song on my main PC, I moved it over to a secondary one ... only to now realize that the file was encoded to play solely on the machine to which it had originally been downloaded. Since my primary motivation for acquiring this song in the first place was so that I could listen to it on a

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portable MP3 player, this simply would not do.

I now had to go back to the site and obtain a license key for that machine which finally enabled me, after more than a week, to hear the compressed version of my tune. Fortunately, the file did allow me to burn the track to a blank CD (many do not), which in Canada of course, you also pay a music industry levy on. Feeling I would be paying for this music twice in so doing, I decided to burn it to a rewritable CD and then rip that to an MP3 instead.

So now I had a doubly compressed tune that I could play on any device and a week of my free time had been shot. And though I had indeed paid for this song in terms of the original purchase and my acquisition of a rewritable CD, my music was now illegal. And the music industry wonders why people forego the preceding steps and simply download a pirated copy in the first place.

DRM is becoming more ubiquitous daily, with its latest incarnation being found in the so called "Broadcast Flag," originally proposed by the FCC to be enacted by June 1 of this year. This technology would have enabled the media companies delivering content to restrict what consumers could do with it on a per episode basis.

The Broadcast Flag provided for either the complete restriction of digital recording, or the degradation of HD content to standard TV resolution should recording be permitted. Additionally, restrictions on making more than one recorded copy and the ability to disallow skipping of commercials were included in the spec.

Fortunately, the FCC lost the first battle on this one as the United States government stated that the passing of this bill did not fall under the FCC's jurisdiction. Obviously, this doesn't mean that the Broadcast Flag is going away – just that it'll have to go through different channels to become law. In fact, electronics manufacturers (many of whom, like Sony, are content distributors as well) have for some time now been so certain of its enaction that they have long been producing hardware that conforms with the specification – go figure.

It seems the digital wild west is rapidly coming to end, resulting in "fair use" being heavily trodden underfoot. We are now shackled with even more restrictive content consumption limitations than we had before the digital revolution, while at the same time these technologies are nonetheless being touted as "liberating" by the media companies lobbying to deploy them. Frankly, even George Orwell would be impressed by this latest incarnation of newspeak.

By Ray Richards

Questions and comments relating to the Personal Computing section, including Ray Richards' monthly column, can be sent to: personalcomputing@ppublishing.ca.

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Intel Celeron D340J	$1934.99 or $68/mth
Intel Pentium 4-530J	$2074.99 or $69/mth
Intel Pentium 4-540J	$2124.99 or $71/mth
Intel Pentium 4-630	$2144.99 or $71/mth
Intel Pentium 4-640	$2204.99 or $73/mth

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PREMIER COMPUTER CANADA UPGRADE BUNDLES - Sorry, no substitutions

Intel Celeron Upgrade Bundle

Intel Retail-Boxed Celeron D CPU	320 - see web
Abit IS7-E2 Motherboard	325 - see web
256Mb DDR Ram, PC3200	330 - see web
Enlight Mid-Tower w/ Enlight 300W	335 - see web

Asus Sempron 754 Upgrade Bundle

AMD Retail-Boxed Sempron CPU	2600+ see web
Asus K8V-X Motherboard	2800+ see web
512Mb DDR Ram, PC3200	3000+ see web
Enlight Mid-Tower w/ Enlight 300W	3100+ see web

Asus Pentium 4 Upgrade Bundle

Intel Retail-Boxed Pentium 4 CPU	630J - see web
Asus P5P800 Motherboard	540J - see web
512Mb DDR Ram, PC3200	630 - see web
Chenbro Mid-Tower w/ Enlight 350W	640 - see web

Asus Athlon 64 Upgrade Bundle

AMD Retail-Boxed Athlon 64 CPU	3000+ see web
Asus A8V-E/Deluxe Motherboard	3200+ see web
1Gb DDR Ram, PC3200 (2 x 512Mb)	3500+ see web
Chenbro Mid-Tower w/ Enlight 450W	FX55 see web

Premier RAM and Memory

AMD Sempron 2400+ (Socket A) 333Mhz	see web
AMD Sempron 2600+ (Socket A) 333Mhz	see web
AMD Sempron 2800+ (Socket A) 333Mhz	see web
AMD Sempron 3100+ (Socket A) 333Mhz	see web
AMD Sempron 3100+ (Socket 754)	see web
AMD Sempron 3100+ (Socket 754)	see web
AMD Athlon 64 3000+ (Socket 754) AXBOX	see web
AMD Athlon 64 3000+ (Socket 754) AXBOX	see web
AMD Athlon 64 3400+ (Socket 754) AXBOX	see web
AMD Athlon 64 3400+ (Socket 939) BNBOX	see web
AMD Athlon 64 3200+ (Socket 939) BPBOX	see web
AMD Athlon 64 3500+ (Socket 939) BNBOX/BPBOX	see web
AMD Athlon 64 3700+ (Socket 939) BNBOX	see web
AMD Athlon 64 3800+ (Socket 939) BPBOX	see web
AMD Athlon 64 4000+ (Socket 939) BNBOX	see web
AMD Athlon 64 FX55 (Socket 939) BNBOX	see web
Intel Celeron D 320 (2.4Ghz) Socket 478	see web
Intel Celeron D 325 (2.5Ghz) Socket 478	see web
Intel Celeron D 330J (2.6Ghz) Socket 775	see web
Intel Celeron D 335 (2.8Ghz) Socket 478	see web
Intel Celeron D 335J (2.8Ghz) Socket 775	see web
Intel Celeron D 340J (2.93Ghz) Socket 775	see web
Intel Pentium 4 645J (3.2Ghz) Socket 775	see web
Intel Pentium 4 2.4-2.6Ghz @ 533 FSB (1Mb)	see web
Intel Pentium 4 3.0-3.4Ghz @ 800 FSB (1Mb)	see web
Intel Pentium 4 3.2-3.4Ghz @ 800 FSB (1Mb)	see web
Intel Pentium 4 530J (Socket 775) 3.0Ghz/1Mb	see web
Intel Pentium 4 540J (Socket 775) 3.2Ghz/1Mb	see web
Intel Pentium 4 550J (Socket 775) 3.4Ghz/1Mb	see web
Intel Pentium 4 560J (Socket 775) 3.6Ghz/1Mb	see web
Intel Pentium 4 630 (Socket 775) 3.0Ghz/2Mb	see web
Intel Pentium 4 640 (Socket 775) 3.2Ghz/2Mb	see web
Intel Pentium D 820 (Socket 775) 2.8Ghz/1Mb	see web
Intel Pentium D 830 (Socket 775) 3.0Ghz/2Mb	see web
Intel Pentium D 840 (Socket 775) 3.2Ghz/1Mb	see web

Full List of Processors Online

128 MB, SDRAM PC133/Mhz	see web
256 MB, SDRAM PC133/Mhz @ 6/10Chip ... see web/see web	
512 MB, SDRAM PC133/Mhz	see web
256 MB, DDR PC2700 (333Mhz)	see web
512 MB, DDR PC3200 (400Mhz)	see web
1 GB, DDR PC3200 (400Mhz)	see web
512 MB, DDR2 PC4200 (533Mhz)	see web
1 GB, DDR2 PC4200 (533Mhz)	see web

Full List of OCZ & Corsair Online

256Mb Flash Memory USB 2.0	see web
512Mb Flash Memory USB 2.0	see web
1Gb Flash Memory USB 2.0	see web

Flash and Notebook Memory Also Available Online

Premier Cooling Accessories

Arctic Silver 5 Thermal Paste	$9.99
Antec 80mm Case Fans w/ Blue or Red or Green or Tri-Color LEDs	$9.99
Aus Star Ice Heat Sink & Fan	$32.99
Coolermaster Hyper 48 CHC-V81 Heat Pipe	$49.99
Coolermaster Hyper 48 KHC-L91 Heat Sink & fan	$49.99
Ventcool Ultimate Hard Drive Cooler (Beige/Black)	$19.99
Thermaltake Big Typhoon Heat Pipe & Fan	$49.99
Thermaltake Silent Boost A1689 / Volcano 7+	$29.99/$34.99
Thermaltake Silent 775 Heat Sink & Fan (Socket 775)	$44.99
Thermaltake Sonic Tower Heat Pipe	$54.99
Thermaltake Fans 60mm / 80mm	$9.99/$9.99
Thermaltake Extreme Spirit (A1899) Chipset Cooler	$14.99
Thermaltake Cold Cathode NEON Lights - Sound Activated	$19.99
Ventec Dual Fan Hard Drive Cooler	$14.99
Ventec Spectrum Fan Card (Blue)	$9.99/$19.99
Ventec Stealth Case Fans 80mm/120mm	$9.99/$19.99
Ventec UGT-CR912 USB 2.0 11-in-1 Card Reader	$19.99
Ventec CNPS7000B-Cu Silent Copper Heat Sink & fan	$44.99
Ventec CNPS7700-Cu Silent Copper Heat Sink & fan	$54.99
Zalman VF700-Aicu Copper/Aluminum Videocard Heat Sink & fan	$34.99
Zalman ZM-NB47J Northbridge Heat Sink	$9.99

Full List of Cooling Supplies Available Online

Antec NexStar2 External 3.5in Enclosure, USB 2.0	$19.99
Antec NexStar2 External 3.5in Enclosure, USB 2.0	$39.99
Antec NexStar2 External 3.5in Enclosure, USB 2.0 & Firewire	$54.99
Antec NexStar2 External 3.5in/3.5in Enclosure, USB 2.0	$44.99
Antec NexStar2 External 3.5in/3.5in Enclosure, USB 2.0 & Firewire	$54.99
Removable EIDE Hard Drive Rack w/ Fan (Black or Beige)	$14.99
Removable SATA Hard Drive Rack w/ Fan (Aluminum)	$39.99

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Premier Videocards

AGP Videocards

Asus v9520-X/TD FX5200 v/ 128Mb (AGP) Video Out	$59.99
Asus Extreme N7600GT/TD v/ 128Mb (AGP) Video Out	$249.99
Asus Extreme N7800GT/TD FX6800GT v/ 128Mb (AGP) Video Out	$319.99
Asus v9999GT/TD FX6800GT v/ 256Mb (AGP) Video Out	$499.99
ATI All-In-Wonder Radeon 9600XT v/ 128Mb (AGP) TV Tuner	$244.99
ATI All-In-Wonder Radeon X800Pro v/ 128Mb (AGP) TV Tuner	$374.99
ATI All-In-Wonder Radeon X800XT v/ 256Mb (AGP)	$494.99
ATI Radeon X850XT Platinum 256Mb (AGP) Video Out	$574.99
Leadtek A6600GT/TDH FX6600GT v/ 128Mb (AGP) Video Out	$249.99
Leadtek A400/TDH FX6800GT v/ 256Mb (AGP) Video Out	$424.99
Matrox Millennium P750 TH/DH v/ 64Mb (AGP)	$259.99
Sapphire Radeon 7000 v/ 64Mb (AGP) Video Out	$39.99
Sapphire Radeon 9250 v/ 128Mb (AGP) Video Out	$54.99
Sapphire Radeon 9550 v/ 128Mb (AGP) Video Out	$74.99
Sapphire Radeon 9550 v/ 256Mb (AGP) Video Out	$89.99
Sapphire Radeon 9600 v/ 128Mb (AGP) Video Out	$99.99
Sapphire Radeon 9600XT v/ 256Mb (AGP) Video Out	$149.99
Sapphire Radeon X800XL v/ 256Mb (AGP) Video Out	$414.99
Sapphire Radeon X850XT Platinum 256Mb (AGP) Video Out	$514.99

PCI Express Videocards

Asus Extreme AX300SE/TD v/ 128Mb (PCI-E) Video Out	$79.99
Asus Extreme AX700-X/TD v/ 128Mb (PCI-E) Video Out	$134.99
Asus Extreme AX700/TD v/ 128Mb (PCI-E) Video Out	$144.99
Asus Extreme AX700Pro/TD v/ 128Mb (PCI-E) Video Out	$229.99
Asus Extreme AX800XL/TD v/ 256Mb (PCI-E) Video Out	$309.99
Asus Extreme AX800XL/2DTV v/ 256Mb (PCI-E) Video Out	$369.99
Asus Extreme AX850XT/TD v/ 256Mb (PCI-E) Video Out	$534.99
Asus Extreme AX850XT PE/2DHTV v/ 256Mb (PCI-E) Video In/Out	$574.99
Asus Extreme EN6200GE/TD v/ 128Mb (PCI-E) Video Out	$119.99
Asus Extreme EN6600GT/TD v/ 128Mb (PCI-E) Video Out	$194.99
Asus Extreme EN6800GT/TD v/ 128Mb (PCI-E) Video Out	$244.99
Asus Extreme EN6800GT/TOP v/ 128Mb (PCI-E) Video Out	$259.99
Asus Extreme EN7800GTX/TD v/ 256Mb (PCI-E) Video Out	$374.99
Asus Extreme EN7800GT/TD v/ 256Mb (PCI-E) Video Out	$444.99
Asus Extreme EN8800Ultra/2TD v/ 256Mb (PCI-E) Video Out	$599.99
ATI All-In-Wonder X800XL w/ 256Mb (PCI-E) Video Out	$374.99
ATI All-In-Wonder Radeon X800Pro w/ 256Mb (PCI-E)	$239.99
Leadtek PX8800GTI/TDH Extreme v/ 128Mb (PCI-E) Video Out	$254.99
Leadtek PX8800GTX/TDH v/ 768Mb (PCI-E) Video Out	$534.99
Sapphire X300SE v/ 128Mb (PCI-E) Video Out	$69.99
Sapphire X700 v/ 256Mb (PCI-E) Video Out	$119.99
Sapphire X700 w/ 256Mb (PCI-E) Video Out	$144.99
Sapphire X700Pro w/ 256Mb (PCI-E) Video Out	$214.99
Sapphire X800 w/ 256Mb (PCI-E) Video Out	$269.99
Sapphire X800GTO w/ 256Mb (PCI-E) Video Out	$294.99
Sapphire X800Pro w/ 256Mb (PCI-E) Video Out	$334.99
Sapphire X850Pro w/ 256Mb (PCI-E) Video Out	$434.99
Sapphire X850XT w/ 256Mb (PCI-E) Video Out	$504.99
Sapphire X850XT Platinum w/ 256Mb (PCI-E) Video Out	see web

Full List of Video Cards Available Online

ATI TV Wonder Pro - TV Tuner	$79.99
ATI HDTV Wonder - HDTV Tuner w/ Antenna	$224.99
Leadtek WinFast TV 2000XP Expert - FM & TV Tuner	$99.99
Leadtek WinFast PVR2000 - TV Tuner	$139.99
Leadtek WinFast VR GUR II Deluxe - TV Tuner	$139.99
Sapphire Theatrix Theatre 550Pro FM & TV Tuner	$99.99

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Sony 52X CD-ROM Drives (Beige)	$19.99
Sony 16X DVD-ROM Drives (Beige/Black)	$29.99
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HP 640VI (16x Dual Layer DVD±R/RW) w/ Lightscribe	$129.99
LG GSA-4163 (16x Dual Layer DVD±R/RW) (Beige/Black)	$64.99/$64.99
NEC 3540A (16x Dual Layer DVD±R/RW)(Beige/Black)	$69.99/$69.99
Pioneer DVR-109 (16x Dual Layer DVD±R/RW)(Beige/Black)	$69.99/$69.99
Plextor PX-740A/PX-716S (16x Dual Layer DVD±R/RW)	$134.99/$164.99
Sony DW-D26A (16x Dual Layer DVD±R/RW) (Beige/Black)	$69.99/$69.99

CD-R, CD-RW & DVD-R/R Media Available Online

Premier Motherboards

Motherboards for AMD CPUs

Abit KV7-V, Socket A, KT600 (ATX)	$84.99
Abit ASN-Ultra , Socket 939, nForce4 Ultra (ATX)	see web
Abit ASN-SLI Fatality, Socket 939, nForce4 SLI (ATX)	$279.99
Asus A7N8X-E Dlx, Socket A, nForce2 (ATX) SATA	$109.99
Asus A7NVX-X, Socket A, nForce2 (ATX)	$74.99
Asus A8N-E Premium, Socket 754, nForce4 (ATX)	$129.99
Asus K8V-X, Socket 754, K8T800 (ATX)	$99.99
Asus K8V-SE Deluxe, Socket 754, K8T800 (ATX)	$139.99
Asus A8V Deluxe, Socket 939, K8T800 (ATX)	$139.99
Asus A8V-E Deluxe, Socket 939, K8T800 (ATX)	$179.99
Asus A8N-E, Socket 939, nForce 4 Ultra (ATX)	$149.99
Asus A8N-SLI Premium, Socket 939, nForce 4 (ATX) SLI	$234.99
DFI Lanparty UT NF4 Ultra-D, Socket 939, nForce 4 Ultra (ATX)	$169.99
DFI Lanparty NF4 SLI-DR, Socket 939, nForce 4 (ATX) SLI	$244.99
DFI LP DK SLI, Socket A (AMD), w/ Video, Sound & Lan	$259.99
ECS 760GX-M, Socket 754 (AMD), w/ Video, Sound & Lan	$74.99
ECS KN1 Extreme, Socket 939, nForce4 (ATX)	$134.99
MSI K8N Neo-4 Platinum, Socket 939, nForce4 Ultra (ATX)	$179.99
MSI K8N Neo-4 Platinum SLI, Socket 939, nForce4 (ATX) SLI	$214.99
MSI RS480M2-IL, Socket 939, Xpress200 (mATX)	$119.99

Motherboards for Intel CPUs

Abit IS7-E2, Socket 478, Intel 865PE (ATX) SATA	$89.99
Abit AS8, LGA775, Intel 665PE (ATX) uGURU	$109.99
Abit AW8-Max, LGA775, Intel 955X (ATX) uGURU	$299.99
Asus P4C800 Dlx, Socket 478, Intel 875P Chipset (ATX)	$214.99
Asus P4P800-SE, Socket 478, Intel 865PE Chipset (ATX)	$114.99
Asus P5P800, Socket 775, Intel 865PE Chipset (ATX)	$114.99
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Asus P5GDC-V, LGA775, Intel 915G (ATX) PCI Express w/ VGA	$134.99
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Asus P5ND2-SLI, LGA775, Intel 570SLI (ATX) PCI Express	$279.99
Asus P5ND2-SLIDlx, LGA775, nForce (ATX) PCI Express	$349.99
Asus P5WD2/Pre/WiFi, LGA775, Intel 955X (ATX) PCI Express	$349.99
ECS 661FX-M7, Socket 775 (MATX) w/ Video, Sound & Lan	$69.99
ECS P4M89-M Pro, Socket 478 (MATX) w/ Video, Sound & Lan	$69.99
ECS 915P-A, Socket 775, i915P w/ AGP & PCI-Express	$109.99

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Maxtor 300GB ATA/133 7200RPM Hard Drive w/ 16Mb	$184.99
Seagate 120GB ATA/100 7200RPM Hard Drive w/ 8Mb	$99.99
Seagate 160GB ATA/100 7200RPM Hard Drive w/ 8Mb	$109.99
Seagate 200GB ATA/100 7200RPM Hard Drive w/ 8Mb	$129.99
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Seagate 400GB ATA/100 7200RPM Hard Drive w/ 8Mb	$369.99
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Seagate 120GB SATA/150 7200RPM Hard Drive w/ 8Mb	$99.99
Seagate 160GB SATA/150 7200RPM Hard Drive w/ 8Mb	$114.99
Seagate 200GB SATA/150 7200RPM Hard Drive w/ 8Mb	$129.99
Seagate 250GB SATA/150 7200RPM Hard Drive w/ 8Mb	$164.99
Seagate 300GB SATA/150 7200RPM Hard Drive w/ 8Mb	$214.99
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WD 250GB SATA2/300 7200RPM Hard Drive w/ 8Mb	$174.99
WD 300GB SATA2/300 7200RPM Hard Drive w/ 16Mb	see web
WD 320GB SATA/150 7200RPM Hard Drive w/ 8Mb	$219.99

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Panasonic 1.44Mb Floppy Disk Drive (Black or Beige)	$9.99
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Sony 1.44Mb Floppy Disk Drive (USB)	$29.99
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Linksys WMP54G - 802.11g Wireless Adapter PCI	$64.99
Linksys WPC54G - 802.11g Wireless Adapter PCMCIA	$64.99
Linksys WUSB54G - 802.11g Wireless Adapter USB	$59.99

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Linksys BEFSR41 Cable/DSL Router - 4 Port	$74.99
Linksys WRT54G Wireless 802.11g Router w/ 4 Port	$74.99
D-Link DP-G321 Wireless 802.11g Parallel & USB Print Server	$64.99

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Economy Beige Mid Tower Case w/ 6 Drive Bays (ATX)	$24.99
Economy Black Mid Tower Case w/ 6 Drive Bays (ATX) (MC7799)	$39.99
Chenbro PC61 Beige Mid Tower Case w/ 7 Drive Bays & 300W(ATX)	$69.99

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Antec Aria Cube Case w/ 300W (mATX)	$124.99
Antec Sonata Piano Black w/ 380W (ATX)	$129.99
Antec SLK1650B Mid-Tower w/ 350W (ATX) Beige	$179.99
Antec SLK1650B Mid-Tower w/ 350W (ATX) Black	$184.99
Antec SLK2650BQE Mid-Tower w/ 350W (ATX) Black	$264.99
Antec Super Lanboy Window Case (ATX) Silver	$84.99
Asus TA331 Black Tower Case (ATX) w/ 300W	$64.99
Chenbro PC61S189 Mid Tower Case (ATX) Beige or Black	$64.99
Chenbro Gaming Bomb Case w/ 7 Drive Bays w/ Window (Silver)	$59.99
Chenming ATX601 Steel Case (ATX) Beige or Black	$59.99
Enlight Desktop Steel Case w/ 7 Bays (ATX)	$54.99
Enlight Mid Tower Case w/ 7 Bays (ATX) Beige/Black	$49.99/$54.99
Thermaltake Xaser III VM2000A Aluminum ATX Case	$139.99
Thermaltake Xaser III VM3000A Black ATX Case	$139.99
Thermaltake Xaser 5-V5000D Steel Blue ATX Case	$139.99
Thermaltake Xaser 5-V5000A Steel Black ATX Case	$149.99
Thermaltake Shark VA7000BWA Black ATX Case	$149.99
Thermaltake Shark VA7000SWA Silver ATX Case	$189.99
Thermaltake Tsunami Dream VA3000BWA Black ATX Case	$144.99
Thermaltake Tsunami Dream VA3000SWA Silver ATX Case	$184.99
Thermaltake Tharmalrock Series ATX Case	see web
Thermaltake Armor VA8000BWS Black ATX Case	$189.99
Thermaltake Kandalf VA8000BWS Black ATX Case	$229.99
Thermaltake Kandalf VA8000SWA Silver ATX Case	$264.99
LianLi PC-60USB Aluminum Case (ATX)	$149.99
LianLi PC-61USB Aluminum Case (ATX)	$229.99
LianLi PC-7278 Full Tower Aluminum (ATX)	$234.99

250W - 600W Power Supplies Available Online

Economy 250W ATX Power Supply	$24.99
Enlight 300W Power Supply	$34.99
Enlight 350W Power Supply	$39.99
Enlight 450W Power Supply w/ 2 fans	$69.99
Enermax EG375P-SFMA Power Supply w/ 2 fans (Noiselsaber)	$89.99
Enermax EG425P-SFMA Power Supply w/ 2 fans (Noiselsaber)	$79.99
Enermax EG495P-SFMA Power Supply w/ 2 fans (Noiselsaber)	$94.99
Enermax EG701AX-SFMA Power Supply w/ 2 fans (Noiselsaber)	$164.99
Enlight 450W Power Supply w/ 2 fans	$69.99
Enlight 450W ModStream Power Supply w/ 2 fans	$84.99
OCZ 520W ModStream Power Supply w/ 2 fans	$124.99
Ventec 520W Black Aluminum Power Supply w/ 3 Fans	$114.99

Premier Barebones Systems

Shuttle SS56Gv3 (Socket 478) w/ SiS661FX Chipset	$239.99
Shuttle SN25P (Socket 939) w/ NVidia nForce4	$349.99
Shuttle ST20G5 (Socket 939) w/ ATI Xpress 200	$499.99
Shuttle SN95G5 (Socket 939) w/ NVidia nForce3	$359.99
Shuttle SB83G5 (Socket 775) w/ i915 Chipset	$344.99

More Shuttle Barebone Accessories Available Online

Shuttle PC40 - 250W Power Supply for Shuttle Box	$84.99
Shuttle PF40/PF60 - Carrying Bag for Shuttle Box	$34.99/$69.99
Shuttle FH125 - 2.5in HDD Vibration Dampening Kit	$9.99

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Moving to Mac: The good, the bad and the ugly

Last month I promised you that I was going to be even-handed in my approach to the Mac. Like other computers, it's a tool with both advantages and drawbacks. As I continue to explore the world of Mac with my new Mac Mini, it's possible that I'll occasionally stop to gush about something that impresses me. It's also quite likely that I'll stop to rant about something that's making my blood boil. In that spirit, I wanted to start out with a few of the key things that have hit me already.

A few things I really like about the Mac:

1) When you boot up your Mac for the first time after bringing it home, it asks you if you have another Mac and if you'd like to import your settings and applications over to the new one using FireWire. This is such a simple thing, but it's a brilliant thing to include in setup, because it means that the upgrade process from an old machine to the new one is mostly automated, instead of forcing you to figure out how to do it after the fact. And once you've gone through the process, the new Mac boots up just as if it were your old one, only with new hardware.

2) Icons don't necessarily represent a single file, they can also stand in for an entire "package." In the world of Windows, one file equals one icon. With Mac, that same icon can include a tonne of auxiliary files, too, to make sure you're not overwhelmed with crap on your desktop or in your folders. Need to see what's in the package? Just control-click on

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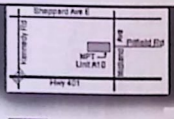

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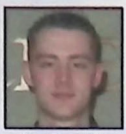
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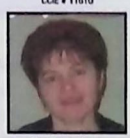
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the icon and choose "Show Package Contents."

3) No realistic worries about spyware or viruses. Well, not yet anyhow. Whereas it seems that I'm spending much of my time running spyware or virus scans on my PC, there's no real need to do so on the Mac at this point.

4) The fact that you have to use your password to install or upgrade any software on the machine, even upgrades from Apple. Sounds annoying, right? Well, it's what's keeping the system more secure than a Windows machine. By forcing you to type your password any time something is installed, it makes you think about the process. If an alert pops up for a software installation that you didn't ask for, how likely are you to type in your password?

And a couple of things I don't like:

1) The fact that you have to use the eject icon before removing a USB flash drive or other removable storage. Theoretically, you have to perform a similar process with Windows before removing external storage to prevent data loss, but Windows is far more forgiving. Just yanking an external drive on Mac can equal loads of corrupted data on that drive, and the consequent premature graying. At least you don't have to throw CDs or external drives into the trash can any more to eject them. Throwing the icon for a removable drive into the trash still ejects it, but at least the Finder now includes an eject symbol beside any removable drives.

2) No option to view photos as thumbnail images when in icon view.

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The Mac's native ability to manage folders filled with images is pretty lame in some ways: sure, you can import all of your photos into iPhoto and view them there, or select all of the photos, Control-click on them and open them up as a slide show, and can even "preview" the images one by one when you switch into column view mode but you can't view the entire folder as thumbnails to quickly go to the image you want. As a rabid photographer, this is definitely on my wishlist.

The ugly:

The Mac file system's insistence on filling up hard drives or USB keys with "shadow" files of the same name but with "._" in front. If you regularly share data between Mac and PC using a USB key or an external hard drive, get used to this feature ... Mac OS hides them, but Windows doesn't. If you have 200 files on that key, plugging it into a Mac OS X system will add an additional 200 files with the "._" prefix. The good news is that you can delete them without any real damage, but it's annoying as stink.

By Sean Carruthers

PC Music Making

Introduction to microphone recording

Even though you may create most of your music using a combination of samples, synths and digital or electric instruments that can be plugged directly into the PC, there will most likely come a time when you want to do some live recording.

Maybe you want a warm, expressive acoustic guitar sound but the General MIDI guitar on your cheap keyboard just isn't cutting it. Maybe you've written some lyrics to go with your latest song, and want to record a vocal track. Or maybe your band is all set to create its breakthrough single and you need to record several different live instruments at once.

In these cases, your most important recording tool (besides the PC itself, of course) is the microphone.

The function of a microphone is to convert sound waves (acoustic energy) into an electrical audio signal that the computer can understand. All microphones contain a component called the "diaphragm," which is a thin membrane that vibrates when struck by sound waves. These vibrations are what convert the signal into electrical energy.

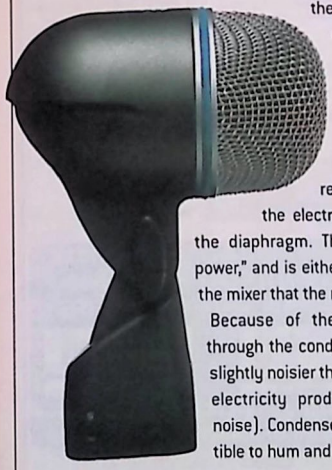
Microphones come in a variety of different shapes, sizes and types, and which variety you buy depends of course on what type of instruments and sounds you intend to record. Here are the most common microphones you'll see in a basic studio:

Microphone Types

Dynamic microphones

The workhorses of the home recording studio, the dynamic microphone has a heavy diaphragm and is quite durable. It has a lower sensitivity relative to other microphone types, and as such is recommended for recording loud instruments like drums and powerful vocals (like rock or hip hop), or for other "close-up" recording situations where the microphone is positioned very close to the sound source.

Lower sensitivity means dynamic microphones are less susceptible to hum and radio frequency interference (RFI), but the trade-off is that they're less adept at capturing delicate instruments and subtleties.



Condenser microphones

Also known as capacitor microphones, these mics require a separate DC to power the electronics and supply voltage to the diaphragm. This is known as "phantom power," and is either supplied by batteries or by the mixer that the microphone is plugged into.

Because of the extra electricity running through the condenser microphone, it may be slightly noisier than the dynamic mic (since all electricity produces a certain amount of noise). Condenser mics are also more susceptible to hum and RFI.

Condensers are good for recording softer voice (though the microphone can distort if the voice gets too loud), piano, acoustic guitar, and other light instruments like flute.

Ribbon microphones

These mics are thin, lightweight (thanks to a lighter diaphragm), and extremely sensitive. They're good at picking up bass frequencies, and have a reputation for delivering a warm sound while retaining the sensitivity of the capacitor microphones.

Microphone Shapes

Just as the various types of microphones are each suited for a particular recording situation, the shape of the microphone should also be considered. Although there are many variations on microphone shapes, they can be boiled down to several broad categories based on sensitivity. (The area where the microphone is most "sensitive" is the area where it picks up the most sound.)

Uni-directional microphones, for example, are most sensitive at the front, and will most readily pick up sound from a source that is positioned straight in front of it, while picking up less of the sound from the back and sides. The cardioid microphone is a heart-shaped variation that, again, is most sensitive towards the front of the heart.

A variety of uni-directional microphone called the hypercardioid (so named for its ability to completely ignore sound from the sides and back with no bleed-through) is especially useful for recording drums, where you might want for example to focus on picking up just the snare sound with no bleed-through from the hi-hat.

Omni-directional microphones, on the other hand, will pick up sound in a 360-degree radius. The quickest and easiest (and cheapest) way to record a group (especially a group of a capella singers) is to plunk one of these microphones down and have them stand around it.

Finally, bi-directional microphones are sensitive at the front and back, but not the sides, and thus are aptly called "figure eight" mics. Figure eights lend themselves well to recording a vocal duet, with each singer singing into one side of the microphone.

By Erin Bell

Protect your ears

Some facts about headphones and hearing loss

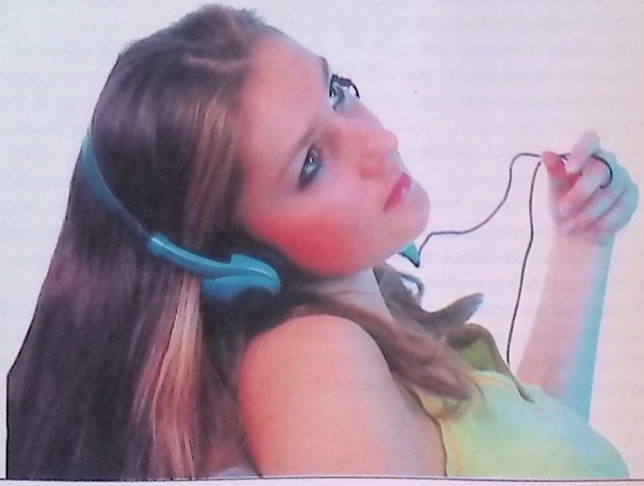
The Who's guitarist Pete Townsend is one of the most famous sufferers of tinnitus, a condition where the cells of the inner ear become so damaged that they produce a non-stop "noise" resembling a loud, continuous buzzing in the ears.

While The Who's infamously loud concerts no doubt contributed to Townsend's condition – speaker output regularly exceeded 120 decibels, according to reports – Townsend in a 1987 LA Times interview blamed his hearing loss on years of playing his guitar loudly through headphones.

Although listening to music through headphones is just one of many factors that can contribute to hearing loss, health experts are treating it as a cause for concern for a few reasons.

One reason is that the ever-increasing storage capacities of MP3 players allow people to listen to music for hours at a time without the breaks previously afforded by having to switch out a CD or flip over a cassette tape.

The second concern is that as the world becomes ever noisier with increased traffic congestion, more people crowding onto public transportation, and more external stimuli, music listeners are being forced to crank up the volume on their portable players to drown out all the noise – and are doing their ears a disservice in



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the process.

The inner ear is an extremely sensitive structure. The organ responsible for hearing is actually a bone curled in on itself that is covered with many tiny hairs, each of which vibrate in sympathy with different frequencies of sound waves to make up our complete range of hearing.

When these hairs are overstimulated by very loud or overly harsh noises, or if fatigued by being exposed to continuous noise at a moderate-to-loud volume, they begin to die off. Hair cells representing high frequencies are the most sensitive and therefore the first to be killed, which is why people often first report hearing loss as not being able to hear high frequencies (such as soft conversations in a crowded room). When all the hairs representing a certain frequency band are killed, the person can no longer hear that frequency at all.

"When you really work those hair cells, for example by going to a concert and being exposed to very loud levels for three hours straight ... it's like trampling all over a lawn," says Tommy Choo, a senior audiologist at the Canadian Hearing Society. "It gets trampled on and recovers, but there's always a little bit that never recovers. So over time and over exposure, it adds up to hearing loss."

Once the damage has been done, it's permanent and incurable.

The solution to preventing hearing loss from using headphones obviously isn't to stop listening to music altogether. Turning down the volume on the music player would be a start, although that solution is impractical in inherently noisy urban environments where listeners often do just the opposite.

"The subway is a perfect example of [people] turning up the volume to drown out the noise," says Choo. "You have to speak quite loudly to hold a conversation with someone, so I would say the noise levels are pretty high already. So to actually hear the music over the noise level, you have to turn the music up even louder than that."

A possible solution is to use headphones with noise cancellation or noise isolation capabilities. Noise cancellation technology works by sampling the outside noise using tiny external microphones built into the headphones, then creating an inverted sound wave of that same noise sample. These two opposing sound waves, when played at the same time, cancel each other out (in the same way that adding +10 and -10 equals zero).

The degree to which the technology works depends on the quality of headphones purchased, and one side effect is that the circuitry actually generates a hissing sound of its own.

Crunching the numbers*

Average decibel levels for common activities:

Rock concert – 120 - 150 dB
Dance club – 110 dB
Motorcycle – 105 dB
Subway trains – 90 dB
Heavy city traffic – 80 dB
Normal conversation – 60 dB

Maximum tolerance per day before risk of hearing loss:

90 dB – 8 hours
92 dB – 6 hours
95 dB – 4 hours
97 dB – 3 hours
100 dB – 2 hours
102 dB – 1.5 hours
110 dB - .5 ours
115 dB – .25 hours

*Data from the Occupational Health & Safety Act (1970).

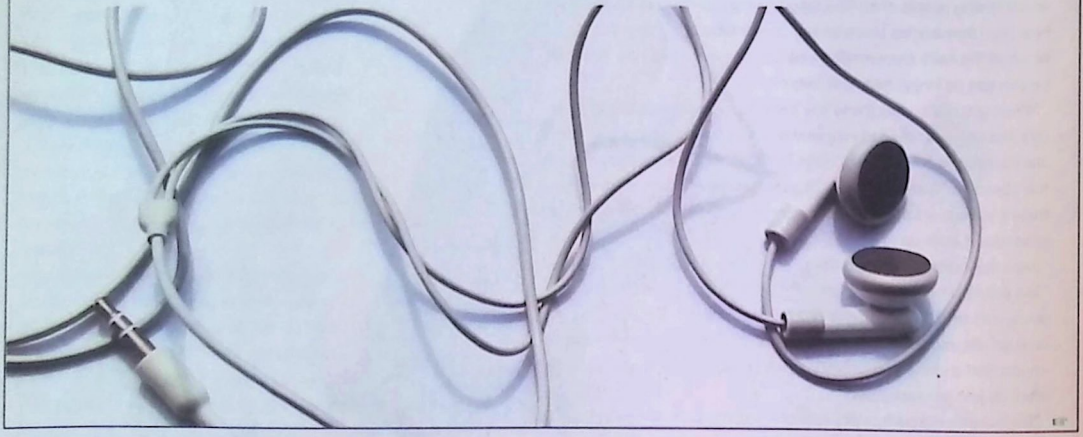
Sound isolation headphones function on a much simpler principle: they simply wedge into the ear and create a seal that blocks out external sounds. The upside is that they're lightweight, create no inherent hiss, and function without bulky battery paks. On the downside, they can be uncomfortable when worn for long periods of time, and can also block out important noises like emergency vehicle sirens, honking car horns, and transit loudspeaker announcements.

Choo also suggests taking frequent rest periods to give your ears a chance to recover, since the effects of noise are cumulative.

"You're worried about walkman use, but the club you go to, the movie you watch, all these things add up," Choo says. "So if you do something noisy, just try to schedule in some quiet time. I know it's hard to do in the city."

By Erin Bell

For more information on hearing protection and testing, visit:
Canadian Hearing Society (www.chs.ca)
The Hearing Foundation of Canada (www.thfc.ca)



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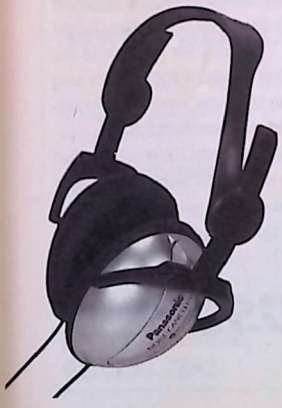

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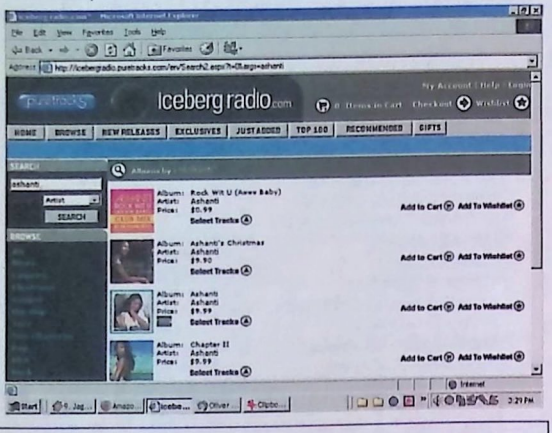
Hit the Road: Fillin' up your MP3 player ... cheap

A couple of years ago, you'd have thought that the end of the music industry was upon us, what with the explosion in music downloading through less-than-official channels. Thanks to the success of Apple's iTunes store, however, it became apparent that people were willing to pay for the tunes, so long as they were made available in an easy-to-find digital format.

While the iTunes store is still going strong – over 400 million songs have now been purchased worldwide – the competition is beginning to push back, offering subscription-based services that allow users to download as many songs as they want for a single flat fee.



This is especially good news for music fans with digital music players that aren't iPods – though anyone can download music from the iTunes store, those downloads can only be played on iPods or the computer (unless you "crack" the digital rights management added to the files, you can't play them on players from Samsung, Creative or iRiver.)

RealNetworks' Rhapsody service has been available for a while, but now has several tiers available, depending on how fanatical you are about your music. The Rhapsody Unlimited service gives subscribers access to over one million songs in the Rhapsody library, for as little as US$8.33 per month. Rhapsody To Go gives users the ability to send as many of those songs as they want to their portable player. Unfortunately, the service isn't available in Canada for the time being.

Yahoo! Music Unlimited is even cheaper, with unlimited downloads costing an even lower US$5 per month. Users will have to download the Yahoo! Music Engine in order to take advantage of the service, and must have a compatible player. Details are available at music.yahoo.com/unlimited, but again, for the time being the service appears to be available only to our friends in the US.

Napster was originally the cause of all the downloading-will-kill-the-industry kafuffle, but the music download icon – now reborn as a pay-to-play service – is one of the companies offering up unlimited monthly downloads for a flat fee ... and unlike Rhapsody or Yahoo!, it's available on this side of the border too. As I write this, Napster's library is only about 700,000 songs deep, and the Napster To Go service runs about $15 Canadian. That seems like a lot, but when you consider that it's the same price as a single CD, it's not quite so bad. You'll need to download the Napster client, which will double as your music library. To transfer songs to your portable player, you'll need one of the players that's compatible with the client and the Napster To Go service, like the iRiver H10, the Samsung YH-820 or the Creative Zen Micro. (See www.napster.ca for a list of available artists and compatible players.)

What these services have done, at least south of the border, is redefine what it means to get music online. Rather than pay for the songs themselves, you're paying a monthly fee to listen to the music. Feel free to download as much as you want, if you're only going to use it on your player or your computer. From that perspective, it's a lot like a very personalized radio station.

The catch: When you want to burn the songs to CDs, or to download them in a format that's compatible with digital music players that aren't compatible with the unlimited services, you still have to pay a per-song fee, which is back to the old-school model.

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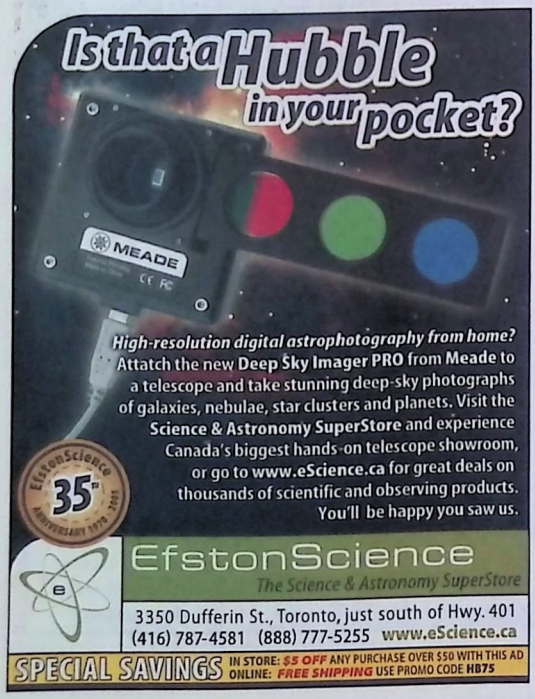

With only one of these unlimited services currently available north of 49, it's hard to say what the impact will be on the Canadian marketplace. As some of these unlimited services start to migrate north, expect to see more competitive pricing all around from the Canadian download services.

By Sean Carruthers

Questions and comments relating to the Wireless section, including Sean Carruthers' monthly column, can be sent to wireless@ppublishing.ca.

For those who still want to pay on a song-by-song basis, there's still the Puretracks.ca store, where you can buy songs for 99 cents to about $1.20, depending on the artist. There are a lot of smaller Canadian artists in the Puretracks selection, making it a good choice for the patriot, though many of the songs are only available if you buy the whole album online.

The watch list: Zen and the art of Bluetooth Headsets

Z-E-N Z-740 Bluetooth headset
www.gennum.com/zen/
US$250 (about $310)

Bluetooth headsets are a dime a dozen these days, it seems, so it really takes something special to stand out in the market. The new headsets from Z-E-N may just do that, for a few reasons. First of all, the isolation earpiece that swivels easily from left-ear to right-ear orientation also doubles as a music earpiece, with a wired connection to your MP3 player. More importantly, the headset has a special processor that filters out ambient noise, even when you're not on the phone. What does that mean? Well, whether you're in a noisy bar or at a noisy construction site, you can filter out unwanted noise and make sure that the voice is what you're hearing ... and sending. The Z-740 headset is available for order online right now, but should be available at the retail level in both the US and Canada later this year.

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Hit the links: Golfing with GPS

The game of golf can be traced back the Netherlands or even further, to the Roman empire where a similar game was played with a bent stick used to hit a ball made of feathers, according the MSN's Encarta online (ca.encarta.msn.com).

The technology of the game has evolved along the way, from feather-stuffed balls and clubs made of wood to a full bag of irons and "woods" without a trace of wood in sight.

Beyond the game lies the industry, an industry that according to Blake Ponuick, VP of sales and marketing for GPS Industries, has seen its business model change drastically in the last decade.

"For years, all you had to do was build a golf course and people would come and spend a tonne of money," he says, but with seemingly more courses than there are golfers, course owners have to compete for the lucrative golfing demographic's attention.

"Club houses are becoming a lot more lavish. There are huge banquet facilities, they're catering to weddings, they're catering to corporate retreats, they're trying to get business functions there with a major push on tournaments," Ponuick says.

It's a sentiment confirmed by Dave Cowan, general manager of Mill Run Golf and Country Club (www.golfmillrun.com) in Uxbridge, Ontario. "If you're not actively marketing, you're actually falling behind," he says. "The consumer is too wise and has too many choices to put up with second best."

Technology touches the game in many ways from highly engineered clubs and balls to virtual reality training aids like Canada's own Virtually Perfect Golf (www.virtuallyperfectgolf.com).

On the course however, players are freed from the technology of every day life for a few hours (six if you play anything like I do). Cell phones mysteriously run out of juice before the round even starts and while the laptop computer may have made the trip out of the office, that's only to lend credibility to the business legitimacy of hitting the links.

GPS Industries is a company attempting to change this scenario for the better with its Inforemer, a hand-held or cart-mounted device that offers up all kinds of useful golf information using the global positioning system (GPS) and WiFi (802.11b) Internet connection.

Think of it as a highly interactive videogame. The front-end customer experience is similar to a golf videogame with course and hole overviews, distance to the pin and other info with which to make a shot. Users can also order food and beverage service, request equipment and in tournament settings, see where others are on the course, keep score and compare their game with other players.

Meanwhile in the back-end, golf course management are running a kind of Tycoon game, keeping people moving through the course, gathering usage data and sending out the beer cart to thirsty patrons, among other things. The faster they move through the course and the more they spend, the better.

Grant Gray, head professional at Mayfair Lakes Golf Club (www.golfbc.com/courses/mayfair_lakes) in Richmond, British Columbia says that installing the Inforemer system has allowed the course to further its relationships with golfers.

"We send little messages to our members all the time because we can see where everybody's at on the golf course ... I can say 'don't hit it in the water' just before they're about to tee-off ... you can have fun with the customers."

Ponuick explains that Inforemer is more than a distance judgment tool for golfers. While players can see the position of other golfers on the course, deciding whether to tee off or wait for the people ahead to play through, they can also order food and beverage service or equipment on the course. Ponuick describes a complete course management system where everything from tee times and tournaments to the kitchen and pro shop are all linked using the various software and hardware components of the system.

"We've got a GPS food runner now. You can actually order burgers and beers right to your tee. The order prints up right into our kitchen and the food is cooked and brought to you," says Gray.

The tie that binds it all together isn't a tie at all; it's wireless.

To install the system, the first step is to send out one of GPS Industries' own surveyors to plot the location for WiFi repeaters and access points. The wireless network extends to the banquet and meeting facilities as well as to surrounding houses and parks in some golf course communities.

The course is then "geo referenced," where hazards, holes, tee boxes and the overall landscape is plotted using GPS coordinates for recreation on the handheld and cart-mounted devices the golfers will use on the course.

The installation of a full back-end management system costs the course about $230,00, with leasing options through the same companies that lease golf carts in some cases, Ponuick says. The idea being that this sizable investment pays dividends with increased food and beverage sales, faster and better organized play time and on-screen advertising.

There are a fair few companies offering GPS systems to golf courses already. Ponuick says the Inforemer sets itself apart with its ruggedized

Canadian Inforemer courses

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Richmond, British Columbia

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Uxbridge, Ontario

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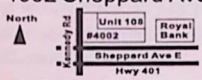

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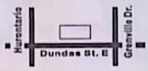

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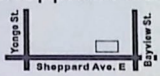

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and easily-installed hardware and by the fact that the company installs and runs communications over a WiFi network. "We are the only GPS company thus far that has deployed a WiFi network," Ponuick says. "Some of the other companies out there they do a two-way 900 MHz radio. We've gone WiFi because it's the industry standard."

Using the 802.11b standard for communications means that neither GPS Industries nor the golf courses installing its Inforemer system have to bother with licensing issues for specific bands on the communications spectrum. Also, food orders for example are sent directly from the Inforemer unit to the back-end management systems and into the kitchen where they are prepared.

Meanwhile, golfers can check the score in a pro or college game by way of a partnership with CBS Sportsline that provides real-time sports scores, Ponuick says. As golfers make their way around the course, they reach certain "trigger zones" that display the next hole overview, throw up an advertisement or similar.

The system can also be expanded to incorporate existing back-end point of sale or database software. Cowan says his existing software supplier was able to work with GPS Industries to incorporate extended functionality into the Inforemer system. "When the emergency call comes in to the pro shop, it comes to every single POS station, Jencess (his existing software supplier) takes over and searches the database for anybody that's on the golf course and if there's a doctor listed, it would send a message to the doctor saying "we need help at this hole."

The bottom line for golfers, Ponuick, Cowan and Gray agree, is a stronger value proposition. A more efficient game of golf, a gauge on how far they hit a drive off each tee accurate to within about half a yard (.46 m) how far to course hazards and to the pin along with a simplified food and beverage ordering process, available WiFi in the club house (or on the course if you're really so inclined), up to the minute sports scores and a more enjoyable and profitable tournament experience.

By Andrew Moore-Crispin

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Test Lab: Photo Wallets

Kodak EasyShare picture viewer

According to Kodak, the picture viewer is designed to be a simple carry-along device that will fit in a purse so that primarily women (Kodak's key focus at present, we're told) can always have pictures of the family or from a recent vacation on hand.

The device is certainly compact but even less demanding users are bound to run into the 32MB limit in on-board storage if purchased as a means for off camera storage.

The Picture Viewer only works with MultiMedia Cards (MMC) and Secure Digital (SD) memory cards, the latter being the type used in Kodak's own and a number of other cameras. The device can interface with recently released Series 3 Kodak Picture Docks too.

In keeping with its primarily casual potential user base, it's easy to use, especially relative to some of the other available options. That said, with its core function being off-camera display as opposed to off-camera storage, we have to wonder why potential users wouldn't just purchase a still relatively easy to use PalmOne colour PDA instead.

Users can connect the Picture Viewer to a PC using the simple EasyShare software suite to print and email photos with little user interaction. The software will also import a list of contacts for storage on the device. On the move, users can hit the familiar (to Kodak users) red Share button and choose to print or email photos then have them sent or printed when the device is next connected to the home PC. Users can also optimize pictures for storage and viewing on the Picture Viewer's 2.5-inch LCD screen; this allows for over 150 pictures on the device at screen resolution.

While the Kodak Picture Viewer offers no functionality beyond displaying, deleting or earmarking images for printing or email, it does these things well.

Zling Photo Wallet

While the most barebones of photo wallets tested, the Zling Photo Wallet is arguably the smartest. It's is essentially a decent looking plastic shell with some coloured LEDs (or small LCD depending on the model) wrapped around a "rugged" 1-inch hard drive, with just two buttons (Power and Copy), two card input slots for Compact Flash, SD and MMC memory, a DC in to charge the internal battery and a USB port for connection with a PC.

Users simply power the device up, stick a compatible memory card into the appropriate slot and hold the "Copy" button for a second or so. The Photo Wallet creates a new folder for every transfer based on the storage type and order archived.

When connected to a PC, the device shows up as a removable drive with both slots and the internal hard drive accorded a drive letter, allowing it to act as a card reader too.

Info Box

Kodak **www.kodak.ca** **Estimated price:** $200
Dimensions: 86mm x 58mm x 10mm (WxLxD) **Screen size:** 2.5-inch
Display type: LCD **Storage capacity:** 32MB
Transfer speed as tested*: NA **Weight:** 88g
Daylight viewing: few **Compatible media:** SD, MMC

Pros:
- Small and light weight
- EasyShare button and software integration
- Simple operation

Cons:
- Limited space actual storage
- Limited functionality beyond displaying pictures

Info Box

Z-Cyber **www.z-cyber.ca** **Estimated price:** $85 (1GB) to $185 (5GB)
Dimensions: 80mm x 86mm x 18mm (WxLxD) **Screen size:** NA
Display type: NA **Storage capacity:** 1, 2 and 5GB
Transfer speed as tested*: 0.57MB/sec **Weight:** 80g
Daylight viewing: NA **Compatible media:** SD, MMC, CF I and II

Pros:
- Small, light weight
- Simple operation
- Inexpensive

Cons:
- Slow transfer speed
- Limited functionality

By keeping the unit barebones, Hong Kong-based Z-Cyber has managed to keep the price down too. For quick and dirty off-loading of CF or SD card storage in the field, the Photo Wallet accomplishes its task well.

The transfer is slow however. 117MB of data stored on a 128MB card took 3:26, which translates to about 0.57 MB/sec. The transfer process is hands-off, however, and once the Copy button is pressed, users can leave the device to do its thing. Once on the device, data can be transferred to PC at a still too slow 5MB/sec.

The 1GB version is of questionable value with 1GB being a practical minimum card size for dSLR users. However, the 5GB version easily affords space for an entire vacation's worth of pictures or could be transferred to a laptop and erased for die hard documenters.

At about $37 per GB for the 5GB version and with CF memory costing in the region of $160 for a 1GB card, the value proposition is good.

The unit is lightweight and easy to stash in a camera bag, but the transfer from card to hard disk is still too long a process.

P-2000 Multimedia Storage Viewer

More akin to a Portable Media Center than a photo wallet, the P-2000 is a large-screen, bright and attractive device.

While it could theoretically make the trek out for a day of shooting, it would probably be more at home sitting in the hotel room waiting for the memory cards to come to it. In short, it's heavy, making it not exactly the most portable solution out there. At the same time, it offers the largest storage capacity of any we looked at in this roundup.

Upon inserting a compatible card and choosing to transfer files, users create an album name using an awkward letter selection screen and the directional pad or choose from the pre-loaded album name options like children, travel, favourites, movies and music.

The bright and sharp 212 ppi display is what sets the P-2000 apart. As just a method for storing images off-camera, the unit is overkill. PC-free

photographers might enjoy the fact that the device can show off snaps on its fairly large screen, gives several slideshow options like duration, transitions and accompanying musical score from the few pre-loaded options. It can also print directly to compatible printers via USB.

The device supports playback of MP3 and AAC files but can only play motion-JPEG and MPEG-4 format video. While video is displayed at up to VGA quality at 30 frames per second, music playback seems inordinately slow, taking several seconds to load up and begin playing a song. And with no apparent way to use transferred music files as background music for slideshows, the usefulness of this function is questionable.

PhotoVault MCS1

Trust Sony to do things differently, for good or ill.

It's a neat concept and sure to elicit more than a few questions as users burn their vacation snaps in a café or similar, but with limited storage and by introducing consumables into the equation, the PhotoVault's usability is called into question. Not to make too fine a point of it, but why not just purchase a PC-based CD burner?

The PhotoVault uses the included AC adapter or a fairly small removable battery pack that takes four AAs.

Upon inserting a MemoryStick, the device recognizes the storage media and offers to burn its contents to mini-CD-R. Folders are created on the disc according to when the pictures were transferred, and following a successful burn, the disc is kept open for further recording.

It's fairly small and lightweight, is compatible with other cameras but not PCs via USB, offers video out for display from MemoryStick, connected USB device or burned CD to TV. But really, Mini CD-Rs?

By Andrew Moore-Crispin

Info Box

Info Box

WarioWare Twisted

Publisher / Developer: Nintendo
ESRB: Everyone Platform: Nintendo GBA
Star rating: 4.5

Twisted is an interesting instalment in the two-year and four-game old WarioWare franchise. It adheres to the core gameplay model of frenetic, three-second "microgames" and has players progressing through a story of sorts meeting different characters and playing through their unique twist on the now classic gameplay.

What sets Twisted apart from others in the series is a gyroscope sensor and rumble feature built in to the cartridge. Instead of using the control pad and mashing buttons, gamers must physically move their GBA to succeed. Examples of some of the more than 200 microgames include spinning the GBA around to get a key off of a keychain, tilting the GBA to navigate a ball through a simple maze, ironing a shirt, twisting the GBA to move the iron along its path and many others that defy quick explanation. It's an interesting take on the now classic WarioWare gameplay and worth checking out.

By Andrew Moore-Crispin

Good
-Great use of gyroscope
-Varied microgames
-Cool unlockables

Bad
-Elicits weird looks when playing
-"Story" questionable

Final thought:
A great new twist on a now classic.

Star Wars: Revenge of the Sith

Publisher: Ubisoft Developer: Ubisoft Montreal Platform: Nintendo DS

Revenge of the Sith is essentially a port of the Game Boy Advance side-scroller of the same name with some added 3D flying levels, multiplayer dogfights and limited touch-screen menu functionality in the DS's lower screen.

Gameplay follows that of classic brawlers like Double Dragon, as players experience the events of Star Wars - Episode III through the branching storylines of either Anakin Skywalker or Obi-wan Kenobi.

Though level design is repetitive, the game is kept interesting by the combat itself, which discourages button-mashing in favour of a more refined technique involving a variety of lightsaber moves (including the cool ability to block and reflect blaster fire) as well as Force moves such as Force Push, Force Heal and Throw Lightsaber.

Players have access to a completely different set of Force moves (Light or Dark) depending on whether they play as Obi-wan or Anakin, making it worthwhile to play through the game multiple times.

It's a shame that the DS's extra buttons aren't put to good use; instead, executing special moves requires pressing two or even three buttons simultaneously. However despite failing to fully exploit the potential of the DS, this port isn't too shabby. If given the choice, it's worth getting the slightly upgraded DS version.

By Erin Bell

INFO BOX

-Good overall production values -Multiple playthroughs	-Some awkward button-mapping -Repetitive level design

Final Verdict: Exciting lightsaber combat and a variety of Force moves keep this one interesting.

ESRB: E

Dynasty Warriors

Publisher: KOEI Developer: Omega Force
Platform: Sony PSP ESRB: Teen Star rating: 2.5

The portable version of Dynasty Warriors is gorgeous to behold, but delving a little deeper reveals limitations that hamper the gameplay and make it ultimately less enjoyable than its console cousins.

Here, the infamously huge battlefields have been broken up into self-contained segments, which are far too easy to clear. Sometimes it takes as little as 30 to 60 seconds to clear an area – a far cry from the epic two-hour-long battles that Dynasty Warriors fans know and love.

It unfortunately makes for a dull experience, despite the game's prettiness.

By Erin Bell

512 MB
4 In 1
MP-3 Player
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• FM Tuner

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ALLSOP FALCON LASERLINE LAVA maxell mimio PerfectLink prince RITEK spire sumoex VERBATIM xantrex

Enthusia Professional Racing

Publisher: Konami Developer: Konami Platform: Playstation 2

While Gran Turismo 4 receives all the hype, Konami's lesser-known PS2 racing title may steal away some of its thunder.

Enthusia Professional Racing offers an ultra-realistic driving experience that features hundreds of licensed street legal and racing cars. But unlike other racing games, the emphasis is placed less on car tuning options and more on pure driving skill. In fact, game modes such as Time Attack, Free Racing and the meatier Enthusia Life all challenge players to handle cars based on their specs, such as horsepower/RPM, torque, and engine displacement, and also to take into consideration the type of material you're racing on and weather conditions, both of which can vary greatly from one course to another.

Some cars are pretty lame however, especially at the beginning of the game. Let's face it, who wants to drive a Toyota FunCargo or the Mitsubishi EK Wagon? Gamers can race on unpronounceable courses such as Nurburgring and Burgenschlucht, as well as the slick Marco Strada (which looks great at night) or the winding Route de la Siene in France.

And talk about fast and furious – the game's proprietary "Visual Gravity System" means it's one of the first interactive titles to graphically depict G-forces (think of a more realistic Need for Speed Underground blur effect). Remember, it's not an arcade racer, so controlling the cars can be tough – even on the oval Speedopolis Ring, which resembles a NASCAR track. Players must be prepared to lose valuable "Enthusia" points if they crash into other cars or veer off the road. Other features include photo-realistic cars and environments (almost comparable to Gran Turismo 4), and randomly-generated courses to add to the game's replayability. Too bad there's no head-to-head feature via the Internet. Even still, gamers in search of a sim rather than an accessible racer may be pleasantly surprised with this little-known Japanese import.

By Marc Saltzman

INFO BOX

★★★½

- -Realistic driving sim
- -Many cars to choose from
- -Great looking game

- -Many lame cars
- -No online support

ESRB E

Bottom Line: You may not have heard of it, but this Konami racer is worth a spin.

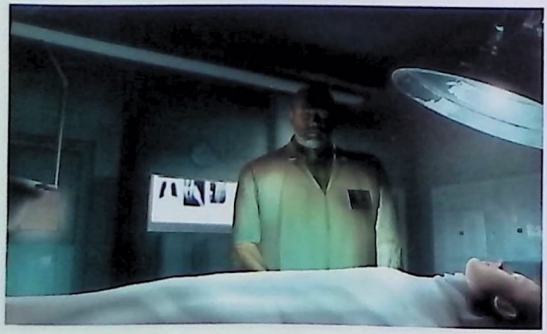
CSI: Crime Scene Investigation

Publisher / Developer: Ubisoft Platform: Xbox

It's time to go to work as an investigator at the Las Vegas crime lab featured in one of TV's most popular shows, CSI. You'll be the rookie, but every major character from the series will assist you, each voiced by the actual performer: William L. Petersen as Grissom, Jorja Fox as Sara Sidle, and Marg Helgenberger as Catherine Willows.

CSI for Xbox plays a lot like a typical adventure game, only you start with a lot of the tools you need to use – fingerprinting kits, UV lights, tweezers to pick up traces of evidence, and so on. Then you head back to the lab to get that evidence analyzed, and identify and compare DNA and fingerprints. The game certainly feels authentic, allowing you to do a lot of what you see in the TV show. You'll even get to question suspects.

CSI is actually two games in one: CSI, and CSI: Dark Motives, both PC conversions. And it shows. The interface is clearly designed for use with a mouse. Control with a gamepad isn't too bad, though hitting different buttons to get to the various menus can sometimes be a chore. And don't expect it to be the best looking game you've played, either. The graphics do the job and not much else.



There are 10 cases, featuring crimes as gritty as anything you'll see on the show. You can replay any of the cases, and the higher you score (out of 100 per cent), the more likely you will unlock concept art, trivia, and behind the scenes stuff.

CSI is priced lower than most Xbox releases – another plus. If you're a fan of the show you'll be happy with this casual and very quick fix.

By Jason MacIsaac

INFO BOX

★★½

- -Actual cast voices
- -Cases written by series writer

- -Interface really better suited for a mouse
- -Lackluster graphics

ESRB M

Bottom Line: A decent (if quick) diversion for fans of the TV show.

In addition to cell phone and camera features, flipping open the Nokia 6820 gives access to a QWERTY keypad for composing emails and text messages. The only catch is that the phone's display is smack in the middle of the keypad, splitting it into two halves. This does create a bit of a mental block at first, although the learning curve can be overcome with practice, and the phone's predictive text capability streamlines the process further. The 6820 also features voice dialing, Web browsing, instant messaging, backlit keys, and easy navigation via a single thumbwheel. The company advertises up to three hours of talk time, or twelve days of standby time. With a three-year service plan from Rogers, the 6820 can be purchased for $99. Without a plan, expect to pay $279.99.

Nokia 6820

GetGames.ca recently launched its online videogame rental service, which advertises no late fees, no due dates and free shipping to anywhere in Canada. For a membership fee of $24.95 per month (plus applicable taxes), customers can rent up to two games at a time from the store's library of more than 2000 titles encompassing Game Boy Advance, Nintendo DS, PlayStation 2, PlayStation Portable, Xbox and GameCube. According to the site, the advantages of having no late fees are that there's no rush, and customers can actually finish the game before mailing it back using the included prepaid mailing envelope. Parents also have control over the accounts of their kids in order to restrict rentals over a certain ESRB rating.

Getgames.ca

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PRESENTS ITS Bi-Monthly

PHOTO SPREE

THE CHALLENGE: Summer fun

WIN!

Epson Stylus Photo R320

A fast, full-featured performer, the Epson Stylus Photo R320 makes printing brilliant, long-lasting photos a snap. It prints directly on ink jet printable CD-Rs and DVD-Rs, so it's easy to customize each disk.

This versatile printer includes a color monitor to view, select and crop photos. Print from popular memory cards or PictBridge-enabled digital cameras. For beautiful frame-ready photos, take advantage of BorderFree printing.

THE RULES: You must use a digital camera to capture the subject. Work can be submitted via email (contest@ppublishing.ca). Accompanying your photo should be the make and model of the camera you used, the names of any software you used to modify the image and, if possible, the f/stop and shutter speed you used to take the photo.

Submit your photographs, along with the information from the form below, by August 8, 2005. You can submit up to three photographs, all of which must be accompanied by a submission form. Entries must be submitted via email. Files should be no bigger than 500 KB and no smaller that 300 KB. One photo per email.

Contest Rules: Prizes must be claimed by September 19 2005. Winners must provide valid identification upon claiming prize. The prizes awarded are not transferable and cannot be redeemed for cash. To enter and to be eligible to win, persons must be residents of Canada, and not employees or be domiciled with an employee of Piccolo Publishing, its affiliate companies, or advertising or promotional agencies. The winners will be selected by HUB on August 15, 2005 from among all eligible entries received on or before contest close date. Winners will be contacted by telephone or email. In the event that they cannot be contacted within the first week following the contest another entrant will be selected. All entries become the property of HUB and may be used in subsequent advertisements for the contest. All entries must be submitted by their artist and must be original work.

HUB's Photo Spree contest form. All submissions must contain this information. Send to contest@ppublishing.ca

Deadline: August 8, 2005

Name: .....
Address: .....
E-Mail: .....
Phone Number: .....

Age: .....
Occupation/School: .....
Title of Entry: .....
Camera Used: .....
Software Used: .....

Where do old games go when they die?

They don't go to heaven where the angels fly

Abandonware is the somewhat euphemistic and in some cases questionable name for old games that have, for all intents and purposes, been abandoned by the people and companies that created them.

Nintendo has proven time and time again that it still values its older intellectual property. The recently announced Nintendo Revolution, will give users access to every old game available from the Nintendo Entertainment System to the Nintendo 64 online ... for a fee, of course.

Meanwhile, older games are often re-released as retro game packs for current generation systems. In short, there is still some cash to be wrung from older games. And while truly abandoned software does exist, it's not so much public domain as the people responsible for its creation don't care to pursue any kind of action to halt its sharing.

Pros:
- Easy to navigate
- Available RSS feed
- Title screen captures

Cons:
- File transfer somewhat slow
- Limited to DOS games

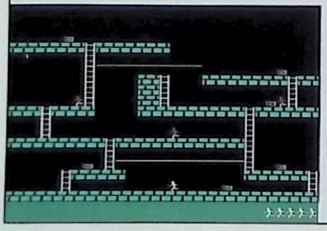
Abandonia

www.abandonia.com

Though confined solely to games that run in the DOS environment (most work fine under the DOS emulator in Windows XP), there are some true classics here – games like Sierra's Quest games (Space Quest, King's Quest, Police Quest) and earlier titles in the infamous Leisure Suit Larry series and LucasArts' Maniac Mansion.

A few stinkers like the dismal Operation Body Count aside, the selection is such that a person who spent any appreciable amount of time in front of a CGA or EGA screen will find something to smile about.

Games can be browsed using easy navigation headings like Action, Adventure and Sports and are afforded an editor's score and a community score out of five. The archive is fully keyword searchable, but the best way to approach this site in this writer's opinion, is to browse around until something strikes your fancy.



Home of the Underdogs

www.the-underdogs.org

Home of the Underdogs has a huge and slow to search database of games, both abandoned and otherwise. In a number of test cases, rather than being presented with a download link, users are given a "buy it here" link. A number of more recent titles like Ubisoft's excellent Beyond Good & Evil are presented with extensive user reviews and a fact sheet but without a download link, which is understandable and perhaps good, but misleading.

Pros:
- Huge selection of games
- Not confined to any one plat form
- Extensive reviews and member community

Cons:
- Slow
- Restrictive one download at a time policy
- Not all games are downloadable

Games like A Boy and his Blob for the NES are available but require users to download a separate "emulator" that will allow PC hardware to play games designed for other platforms.

A strictly enforced one download at a time policy attempts to stem the huge demand that is likely put on the Underdog's servers. Also, to avoid having the site spidered and all content downloaded for posting elsewhere, users are required to input an exact character string in order to initiate each download.

With a huge selection of games and with a wealth of associated and marginally related content, it's a good place to go. However, the "buy it now" links feel a bit like a trick and with more content than the casual browser may be able to wrap his or her head around, it's best to know what you want before arriving.

Classic Gaming Archive

www.archive.com

It's unclear how many of the available games could be fairly classified as abandonware, and a fair few game links lead to a fact page, often with screenshots, and a description and (hopefully) a download link or (seemingly more often) a "buy here" come-on.

The fact that all content is searchable and then categorized by platforms is a nice touch. You can browse the RPG (role-playing game) category for example, then confine the results to display only games for the PC, NES or SNES. Other categories include the Sega Master System, Game Gear and Neo Geo.

A nice touch is to give users a link on the game download page for the software sometimes required to play, specifically in the case of emulated console games.

Pros:
- Wide selection
- Divided down console and PC lines
- Intuitive navigation

Cons:
- A number of "deactivated" downloads
- Membership required for many functions

By Andrew Moore-Crispin

Other sites to check out:

486games.net
www.abandonwarespot.com
ripgames.hostingzero.com
www.freeoldies.com
www.abandongames.com

Introducing the all-new 2006 Subaru B9 Tribeca.

The all-new Subaru B9 Tribeca doesn't fit into a category – it creates its own. After all, how many crossover utility vehicles have symmetrical full-time All-Wheel Drive and a 250-hp boxer engine? Or for that matter, 64 seating arrangements that adjust to suit any occasion? Complement this with a sleek, elegantly designed interior and you're left with a vehicle that's unlike anything you've seen before. Unless, of course, this is your second time reading this. For a third look, visit www.subaru.ca.

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